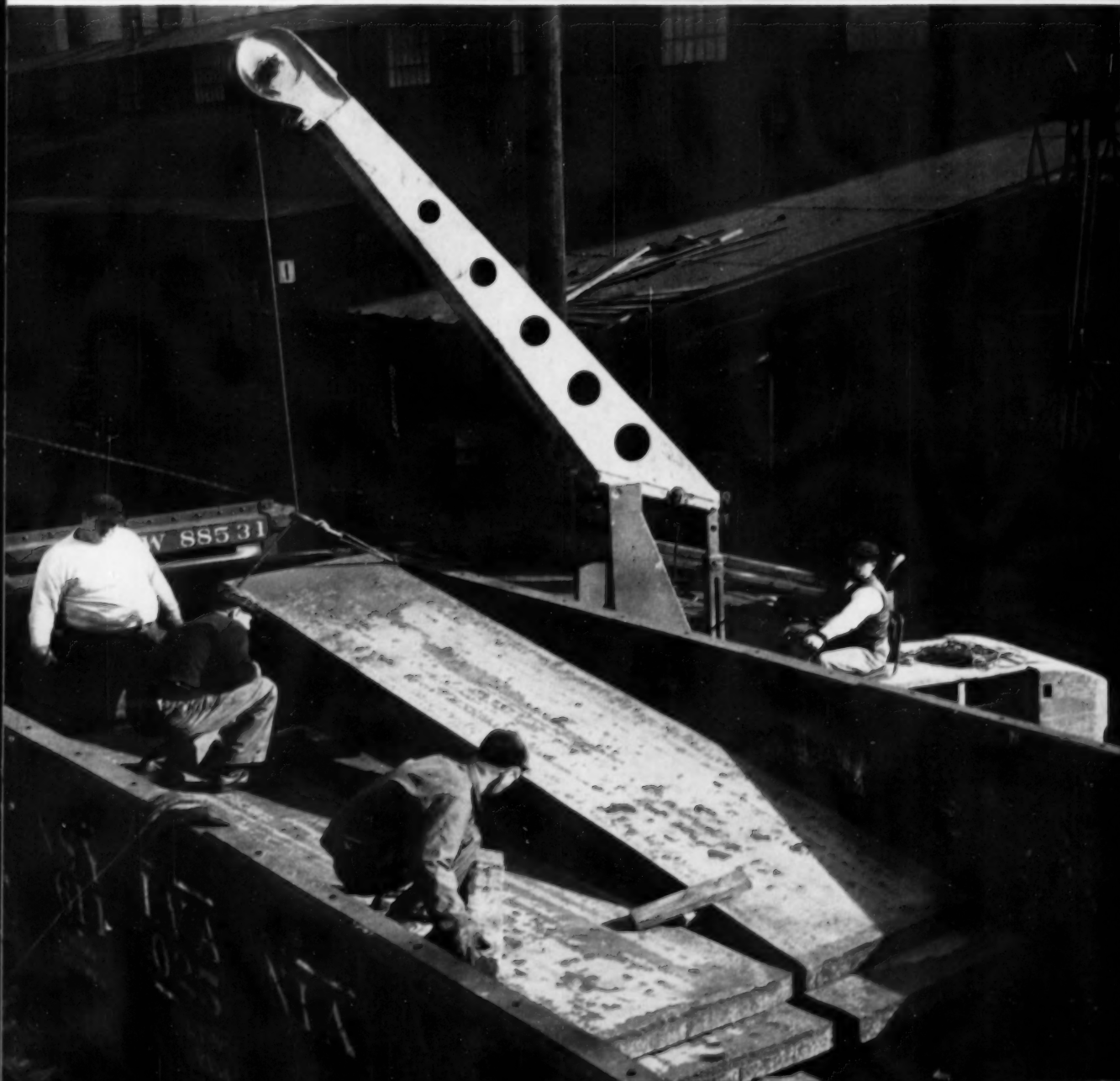


DISTRIBUTION AGE

A CHILTON  PUBLICATION

JULY 1956





Mercury "Jeep" stacking load
in grocery warehouse.



MERCURY MANUFACTURING COMPANY
4104 South Halsted Street • Chicago 9, Illinois

Circle No. 1 on Card. Facing Page 69, for more information

For a man-size job... use **MAN-SIZE** **TRUCKS!**

Moving large volumes of material quickly and at low cost is a MAN SIZE job requiring MERCURY'S MAN SIZE Fork Trucks.

Mercury fork trucks negotiate narrow aisles at safe, high productive speeds without damage to products . . . maneuver material into position with dexterity . . . and hoist loads to ceiling height quickly and easily. Save operating hours with MERCURY Fork Trucks, equipped with a power source that permits top work performance ALL DAY LONG. Mercury invites you to investigate its Fork Truck line before you buy.

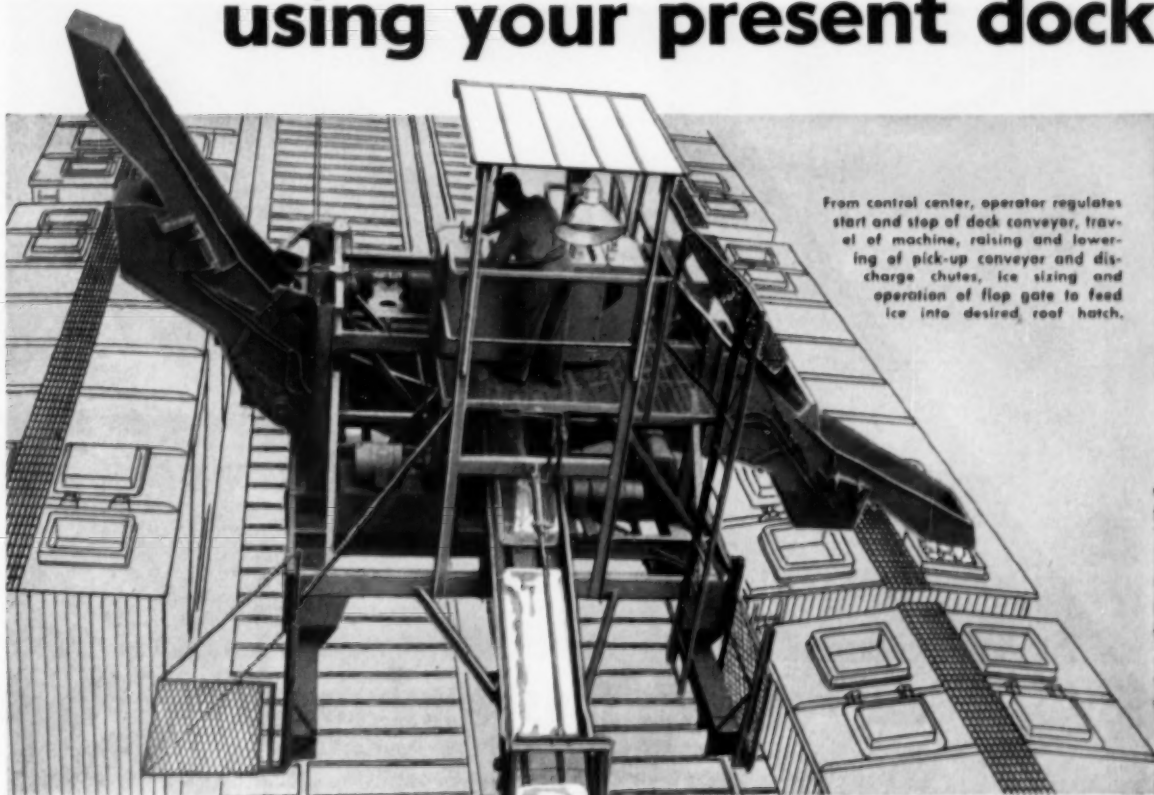


MERCURY "JEEP"
FORK TRUCK
Model 230—Capacity 2000 lbs.
Other models to 8000 lbs.

ASK FOR THE FACTS TODAY!

Write for FREE literature describing MERCURY'S complete line of fork trucks, tractors and trailers.

NOW — faster bunker icing using your present dock



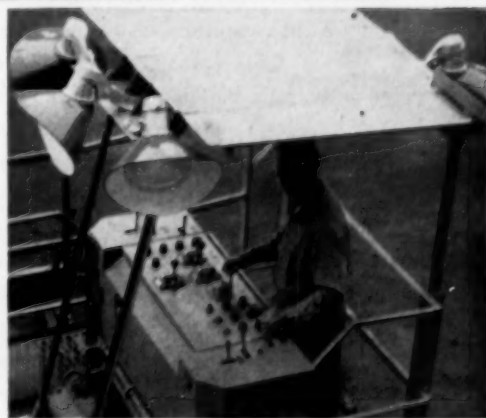
From control center, operator regulates start and stop of dock conveyor, travel of machine, raising and lowering of pick-up conveyor and discharge chutes, ice sizing and operation of flap gate to feed ice into desired roof hatch.

One man controls LINK-BELT car icer

FOR many railroad icing stations, costly revisions in dock structure have been a big obstacle to mechanized car icing. But not today. The Link-Belt Model 55 car icer is adaptable to typical existing docks. Moreover, it can service cars of all heights, with hatch covers of all types.

High capacity and flexibility are key features. This machine receives up to forty 300- or 400-pound cakes of ice per minute "on the flat" from the dock conveyor . . . delivers coarse, crushed or chunk ice automatically. Reversible cross conveyor and dual discharge chutes permit high-speed icing from either side. No manual handling — just one man needed at the controls. In addition, travel speed of 300 feet per minute and hydraulic track brakes provide fast, sure positioning.

Your nearest Link-Belt office can point out more advantages. Or write for Folder 2643.



ELEVATED PLATFORM gives operator full visibility in all directions. Controls are functionally grouped within easy reach to reduce operator fatigue and simplify operation. Four floodlights illuminate entire work area for top-speed icing around the clock.

14-100

LINK-BELT
ICING EQUIPMENT

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants and Sales Offices in All Principal Cities. Export Office, New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N.S.W.; South Africa, Springs. Representatives Throughout the World.

Circle No. 2 on Card, Facing Page 69, for more information

New Knoxville Terminal Opens In August



\$300,000.00 Facility Is Most Modern In The South

Culminating six years of a planned terminal expansion program is the completion of our newest motor freight terminal at Knoxville.

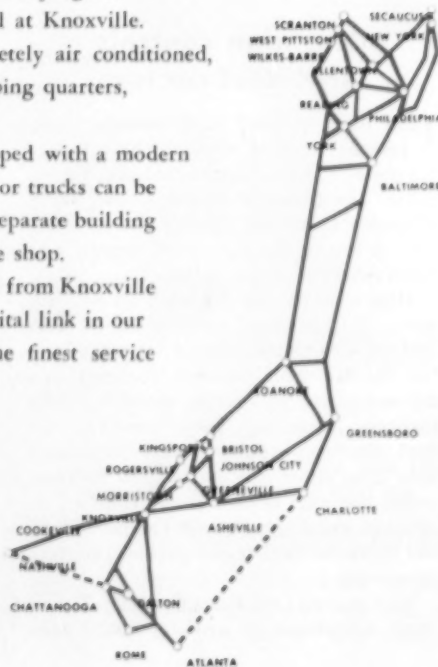
Of fireproof construction throughout and completely air conditioned, the main building contains terminal offices, driver sleeping quarters, recreation room and classrooms.

The loading platform, 15,000 square feet in size, is equipped with a modern dragline under-floor conveyor system . . . 42 trailers or trucks can be loaded and unloaded at the same time. A separate building houses a fully equipped maintenance shop.

As a result of this new terminal facility, shipments to and from Knoxville will move faster and safer—strengthening a vital link in our ever continuing efforts to provide you with the finest service throughout our entire operation.



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KINGSPORT,
TENNESSEE



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JULY, 1956

DA DISTRIBUTION AGE

Vol. 55, No. 7

ESTABLISHED 1901

July, 1956

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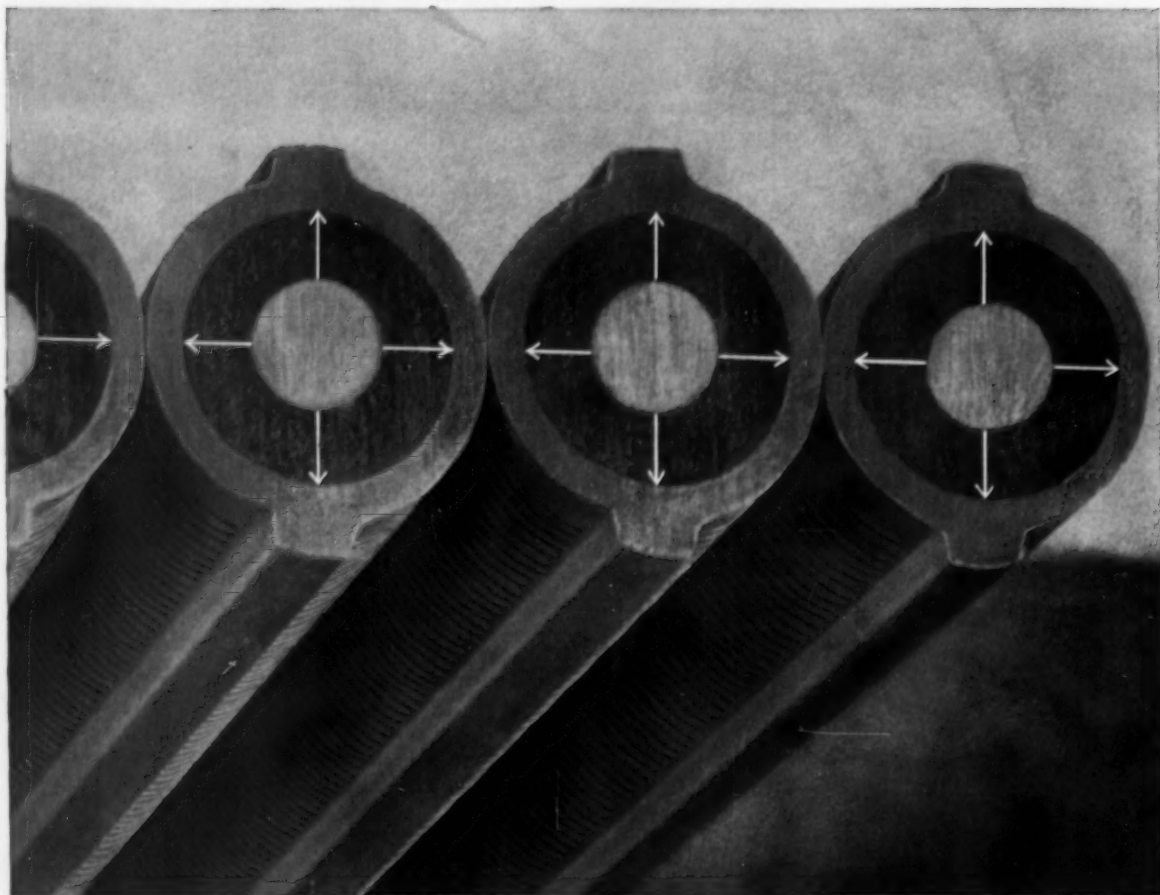
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EXIDE-IRONCLAD BATTERIES

For electric industrial truck operation



Power tubes expand without shedding — preserve battery life

BATTERY FOR ELECTRIC INDUSTRIAL TRUCK. Exide-Ironclad Model TH. Write for Bulletin No. 5161.



Every time you discharge a storage battery, the active material on the positive plates expands. But the plate grids don't expand. This is basic.

On most batteries, the expanding active material tends to shear off from the nonexpanding grid every time the action takes place. But this can't happen in the Exide-Ironclad Battery. The reason is simple.

Active material is formed concentrically around the spinelike grid and held inside the plastic tubes. Expansion is predominantly in an outward direction—hence no shearing. Active material remains firmly locked to the underlying grid structure. And the flexible plastic tubes yield and take up as needed.

This extra protection against shedding of active material is only one of the many reasons for the long life of Exide-Ironclad Batteries. When you order heavy duty batteries, or the equipment requiring them, be sure to specify Exide-Ironclad. Write for detailed bulletin. Exide Industrial Division, The Electric Storage Battery Company, Philadelphia 2, Pa.

Exide®

Circle No. 3 on Card, Facing Page 69, for more information

DISTRIBUTION AGE



**Build with
new, low-cost
DEXION
Slotted Angle**

**No drilling or welding! No waste!
Just cut DEXION and bolt the
frame you want in minutes!**

All you need is a DEXION Cutter and a wrench to transform this precision-made, cold-rolled, galvanized steel angle into practical, useful, economical equipment used almost anywhere in your plant, warehouse, store or office.

Scientifically spaced slots and holes make it easy for you to build an infinite variety of structures. And almost anybody can assemble DEXION. There's no confusing array of tricky parts to cope with.

To save time, work and materials, there's nothing like DEXION. You can use it over and over—it never wears out.

DEXION CUTTER
The secret of DEXION'S fast assembly is the special DEXION CUTTER. One quick downstroke gives you a clean, accurate edge.

DEXION PANELS, CASTERS
Use DEXION panels for shelving or tables. Will support heavy weights. Bolt easily to any DEXION frame. Casters make frame movable.

DEXION Slotted Angle is a packaged product, ten pieces to the package, 10 or 12 foot lengths.
Two sizes: 3" x 1½" x .104" and 2¼" x 1½" x .080".

Write to dept. 7-L today for free DEXION folder. Or write the DEXION Division, Acme Steel Company, 2840 Archer Avenue, Chicago 8, Illinois for the name of your nearest DEXION office or distributor.

WORK TABLE

GOODS CART

STORAGE RACK

DEXION SLOTTED ANGLE

**ACME
STEEL**

ENGINEERING IN ACTION...

BACKED UP *three deep*
when you use Allis-Chalmers
Fork Trucks



You enjoy almost "Factory-town" service wherever you are when you operate Allis-Chalmers Fork Trucks — for you are backed up *three deep* by Allis-Chalmers' highly successful dealer-branch-factory system.

What does this mean? It means that your dealer is serviced directly from a nearby factory branch — *one of 14*. Each branch carries a full stock of True

Original Parts and is staffed with factory-trained servicemen as well as sales engineers. This assures prompt attention whether you need a replacement part or technical advice.

Ask your Allis-Chalmers materials handling dealer to show you how Engineering in Action with this three-deep service can help on *your* specific job. Write for literature and details.

MATERIAL HANDLING DEPT., BUDA DIVISION, MILWAUKEE 1, WISCONSIN

...with parts and service



Strategically located

FACTORY — Producing True Original Parts for continued TOP performance of your Allis-Chalmers Fork Truck



Dealers and a Network of 14 FACTORY BRANCHES

— Bringing close to you a full stock of parts as well as factory-trained servicemen and sales engineers



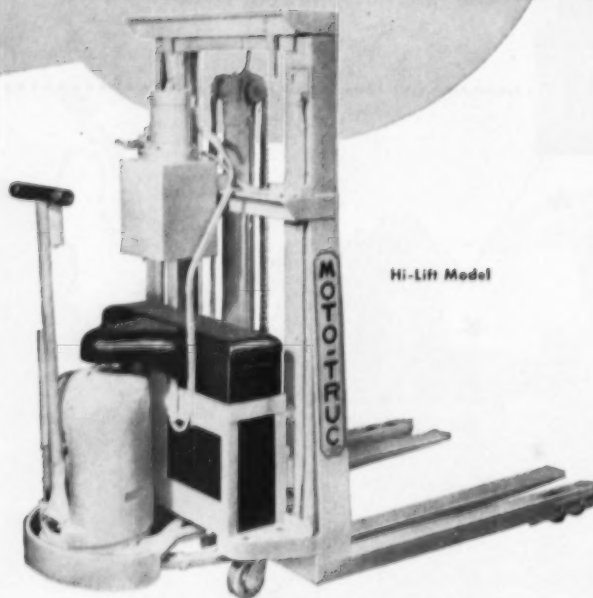
Your nearby

DEALER — Who knows your Allis-Chalmers Fork Truck inside and out — and is qualified and ready to give you prompt, expert attention

ALLIS-CHALMERS



8 reasons why YOU should buy MOTO-TRUC



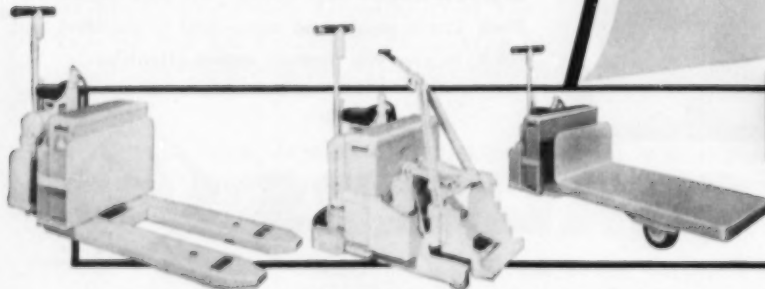
Hi-Lift Model

Whether your materials handling needs require standard equipment or must be custom built, it will pay to investigate MOTO-TRUC.

From the very inception of the battery operated walkie type truck (developed by MOTO-TRUC in 1936) MOTO-TRUC design and development has set the "pace" in the industry.

The features listed above are only a few of the advantages offered by MOTO-TRUC.

Write for literature covering all the features and models available.



MANEUVERABILITY . . . shortest overall length

LOAD SAFETY . . . Low center of gravity, four point load support

SIMPLICITY OF OPERATION . . . patented roller grip controls

CONSTANT TRACTION . . . spring loaded drive unit on high lift models

LESS DOWN TIME . . . Interchangeable Power Unit

EASE OF MAINTENANCE . . . Simplified for quick service

RUGGED CONSTRUCTION . . . All welded frame construction

VERSATILITY . . . There's a MOTO-TRUC for every purpose



The MOTO-TRUC Co.
Representatives in Principal Cities

1956 E. 59th St. • Cleveland 3, Ohio
Pallet . . . Platform . . . Hi-Lift Trucks
The Originators of the Walkie and Small Rider Type Truck.

On the Line—



The Thrill of Rediscovery

There's a lot of kidding about what goes on at the 19th hole of a country club golf course. But, if one can keep his equilibrium, he can make some interesting contacts—if he is able to overlook their immediate condition. After about three or four strokes of scotch on the rocks, many a Milquetoast emerges from his cocoon and becomes a tycoon; a gay, dapper chap often becomes sullen and bedraggled; and the silent fellow gets garrulous.

Two weeks ago, we paused to refresh at the 19th of a seashore club. By chance, we sat next to a distinguished-looking food chemist we knew. He seemed to be having trouble keeping up with the rising tide. His pudgy partner, also out pretty deep, had just taken first-aid treatment—some yummy gummy for the tummy, which he fished out of his pockets somewhat unsteadily.

Unable to stave off curiosity, and perhaps unconsciously trying to acquire some knowledge against any future emergency, we asked the partner what the stuff was and how it worked. He started to explain, haltingly, but our friend didn't give him a chance. This normally quiet guy turned to us and loudly proceeded to blast all sedatives and palliatives as nostrums.

Somewhat embarrassed, we did a disappearing act, just as some joker started to yell encouragingly, "Fight! fight!"

This morning we bumped into our friend, and foe of nostrums, as we boarded the early commuters' train. This time he was embarrassed. He started to apologize but we made light of the matter with some good-humored joshing.

For the next 50 minutes our conversation moved from nostrums to food chemistry. As we reached our destination, our friend summed up all the facts he had stated with the words, "What we eat is what we are physically."

We've been thinking about that all morning. The theme is not new. It had been expounded in ancient times as well as in modern. But our friend cited so many new, dramatic examples that they created a deeper impression than anything we learned in the past.

Moreover, the logic of his reasoning has spilled over to embrace the intellect. We rephrased it, "Our mental diet governs our intellectual ability."

We claim no originality or discovery for the above statement. It also has origin in antiquity. Our high school and college teachers tried to instill that truth into our consciousness so that for the rest of our days we might subconsciously seek new truths and pursue higher intellectual goals. Our friend merely brought the fact back to our consciousness. He gave us the thrill of rediscovery. He inspired us to dig up and re-read new and basic texts.

We would like to share that thrill with you by urging you to return to old fashioned, pre-TV type of serious reading—rereading basic texts to rediscover forgotten fundamental facts; and reading current works of our leading thinkers, researchers and developers.

But don't restrict your reading to a narrow range of subjects. Pick new and unfamiliar subjects. Broaden your horizon.

A.W. Greene
EDITOR

Yakkety Yak

On the other hand, some people get carried away by what they read.

BRIDEY: Like the gal who read *The Search for Bridey Murphy* and got herself hypnotized.

... She blabbed about her extramarital love affairs.

... And about a previous marriage not legally ended by divorce.

MURPHY: A gal named Murphy tried to find a Bridey in her past but found, instead, a Sergeant Murphy—a stranger, and a cop.

... He raided her husband's moonshine plant, which she described.

... And recovered a cache of stolen furs, stashed by her husband in a rented food locker.

LOST: One fellow bought a book on hypnotism and got his mother-in-

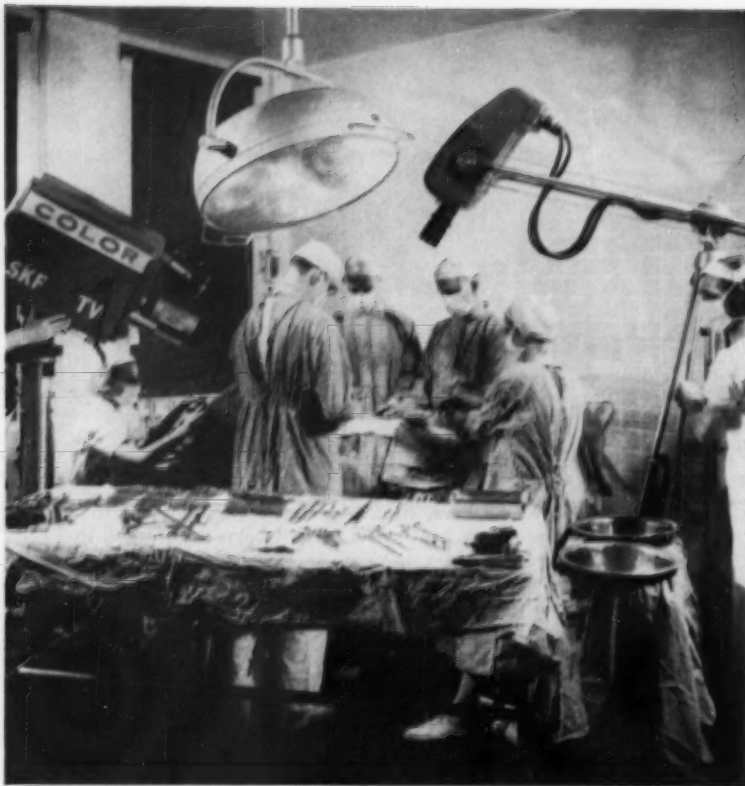
law to give it a try.

... His last instructions to her were, "Get out of this house and never come back."

... She got lost, all right.

CLIPPED: Another guy bought a book on cutting hair. To get experience he cut the hair of the neighborhood kids for free.

... Then got jailed for practicing barbering without a license.



Operation Moving Van . . .

► No, the doctors are not operating on a moving van. But an Aero Mayflower moving van has been helping the doctors learn operating technique since 1949 by moving over 20,000 pounds of color television equipment throughout the United States and Canada for closed circuit television programs. Mayflower has been handling this delicate equipment for the pharmaceutical house of Smith, Kline and French of Philadelphia.

Mayflower moves similar fragile shipments safely every day. Your precious household goods, or the goods of your personnel will get the same expert handling, the same gentle care. For the safe, easy way to move long distance, call your local Mayflower agent.

AERO MAYFLOWER TRANSIT COMPANY, INC. • INDIANAPOLIS

Mayflower Service is available through selected warehouse agents throughout the United States and Canada. Your local Mayflower agent is listed under Moving in the classified section of your telephone directory.



AERO
Mayflower
NATION-WIDE
FURNITURE MOVERS

America's Finest Long-Distance Moving Service

LETTERS

TO THE EDITOR

Private vs Common

To The Editor:

Sometime ago you published an article in one of your issues pertaining to private carriage as against use of common carrier services. As I recall, in the contents of this article is carried a formula which could be applied to developed facts and enable one to arrive at a conclusion in the matter of private vs common carriage.

Perhaps your Research Dept. can locate this article, and if you are successful in finding it, I would appreciate your favoring me with a copy of the issue containing this article.

A. Hunter
Traffic Dept.

American Smelting & Refining Co.
San Francisco 4, Calif.

Two articles in issues of DA last year treated the subject of private vs common carriage. The first, "Private Carriage — Common Carriage, How Thin is the Dividing Line?" can be found on page 30 of the March, 1955, issue. "Does Private Carriage Pay?" appears on page 32 of the August, 1955, issue.—The Editor.

Piggy-Back Service

To The Editor:

As an addendum to your Piggy Back Routing Guide, published in the April issue of DISTRIBUTION AGE, please note the following:

In Supplement No. 15 to our Freight Traffic 172C, ICC C-9368, effective April 12th, we established rates, class and commodity, from New York and North Jersey territory to Louisville, Ky. via Buffalo-NKP-Linden, Ind.-Monon Rwy. and via Suspension Bridge-Wabash RR-Lafayette, Ind.-Manon Rwy.

Also effective April 12th, in Supplement 8 to our Freight Tariff 180, ICC C-9372, we established rates on printing press and structural bases, iron or steel, from New York rate basis to San Antonio, Texas via Buffalo-NKP-East St. Louis-StLSW Ry.-Fort Worth or Dallas, Tex.-T&NO RR (SP Lines); also via Suspension Bridge-Wabash RR-East St. Louis-StLSW Ry.-Fort Worth or Dallas, Texas-T&NO RR (SP Lines).

R. A. Erickson
Director of Public Relations
Lehigh Valley Railroad Co.
New York 6, N. Y.

Additional points served by TOFC, as these points are added by various railroads, will be published in DA pending publication of a supplement to, or revision of, the DA Piggy-Back Routing Guide. Copies of the Guide are available through this office at 25¢ each or \$12 per 100.—The Editor.

Announcing a

COMPLETELY NEW TRUCK SERIES ON PNEUMATICS



HYSTER 30

3000 Lbs. Capacity
At 24" Load Center
(Overhead guard optional)

- 3000 Lbs.
- CAPACITIES... • 4000 Lbs.
- 5000 Lbs.

The Perfect Combination — SHORT OVERALL LENGTH,
LONG WHEEL BASE, SHORT TURNING RADIUS —
Plus Many Other Advanced Design Features:

- Single lever hoist and tilt control.
- Self-energizing brakes (both directions).
- Easy to service.
- Cantilever swing-up engine hood.
- Automotive-type controls.
- Greater operator comfort.
- Large diameter pneumatic tires for better traction, flotation, and "ride".
- Trunnion steering and rounded rear end improves maneuverability.
- LP-Gas (optional).
- Automatic Transmission (optional).
- Free-lift (optional).
- Full range of attachments.

• "Styled by Dreyfuss" means each truck is designed to look good — it also means each is "human engineered" to give the operator: Greater comfort, better visibility, greater driving ease, better position on truck, less driving fatigue, greater ease in mounting and dismounting, simplified control arrangement, and many other factors that enable him to get *more* work done faster, at less cost.

Call your Hyster Dealer today. He is listed under "Trucks-Industrial" in your telephone directory.

Industry's Most Modern Lift Trucks!

STYLED BY
Henry Dreyfuss
INDUSTRIAL DESIGNER



HYSTER COMPANY

Hyster's concept of lift truck design and styling is often copied, never excelled.

2940 N. E. CLACKAMAS, PORTLAND 8, OREGON
1040 MYERS STREET DANVILLE, ILLINOIS
HYSTER N.V. NIJMEGEN, THE NETHERLANDS
FOUR FACTORIES: Portland, Oregon; Danville, Illinois;
Peoria, Illinois; Nijmegen, The Netherlands.



HYSTER 40

4000 Lbs. Capacity
At 24" Load Center
(Overhead guard optional)



HYSTER 50

5000 Lbs. Capacity
At 24" Load Center
(Overhead guard optional)

THERE'S PROFIT IN
**HYSTER
POWER**

100% PERFECT SHIPPING



A shipper's dream that may soon come true!

In a recent month, The Milwaukee Road switched 100,000 carloads of freight through one of its electronic classification yards with only \$900 damage to rolling stock. Here is real evidence of progress in safe handling of cars and cargo.

This railroad has two such freight-saving, time-saving yards, one at Milwaukee and another just outside Chicago. A third electronic yard soon will be serving the St. Paul-Minneapolis area.

Of course they aren't the only reason for The Milwaukee Road's improved service to shippers. Others are all-modern motive power and many new specialized freight cars, such as covered hoppers and airslide covered hoppers. And coming soon, compartmentizer-equipped insulated box cars and mechanical giant refrigerators with roller bearings.

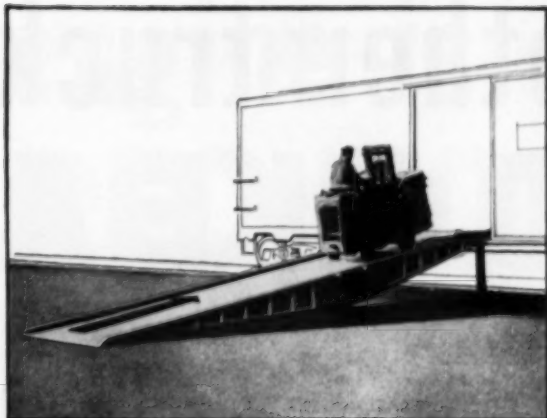


Altogether, from the standpoint of both facilities and manpower, the Milwaukee is a modern, top-notch railroad! Serving *all the West*, it has unusually good connections with lines to and from the East and South. Here's a suggestion! Expedite your freight shipments by specifying the Terre Haute Division.

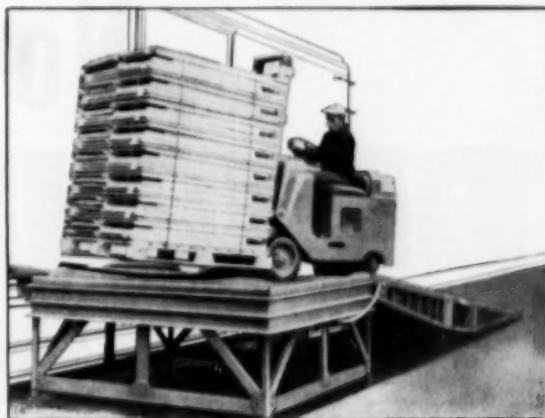
Call your nearest Milwaukee Road agent!



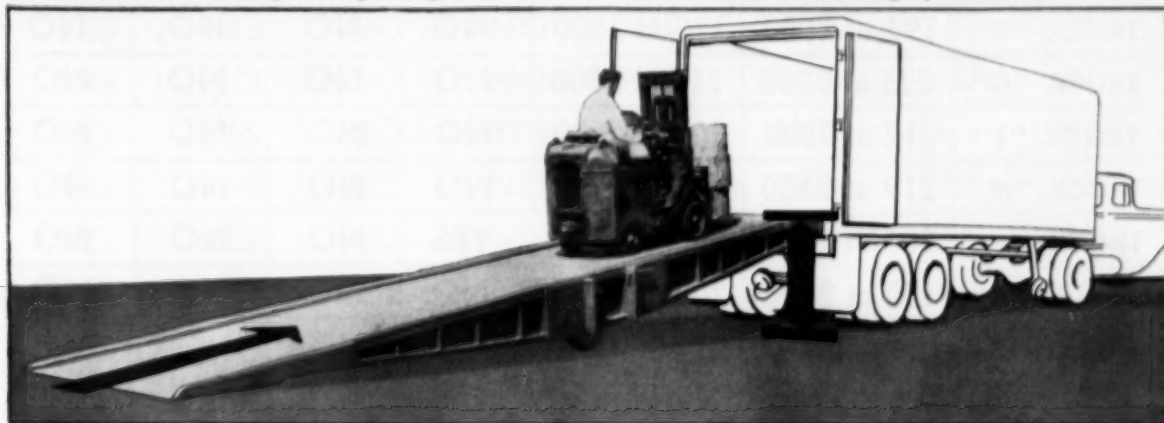
J. M. CUNNINGHAM
General Freight Traffic Manager
Union Station, Chicago 6, Ill.



Ground level car loading—at right angle



Ground level car loading—parallel



Ground level trailer loading

Solve your ground-level loading problems with Magcoa portable magnesium Yard Ramps

Solved: your ground-level loading problems—by a Magcoa portable Yard Ramp. Loading operations jump into high speed with a Magcoa magnesium Yard Ramp—a rugged, easy-to-move loading dock, where you want it, and when! One man moves it without the aid of powered equipment. A manually operated hydraulic lift positions it. You get fuller use of present facilities, lift trucks and operators—less idle time. You cut demurrage charges, and eliminate any need for additional dock facilities.

Speed Plus Safety—As safe as it's fast—your Yard Ramp; designed and built for safety in moving and positioning. Locks securely in place. Long-wearing tread plate assures safe, positive traction. Quarter-round safety curbs—an exclusive Magcoa feature—prevent run-offs, safeguard workers, protect tires, trucks and loads. Special rounded castings at curb-ends give added protection on sharp turns. Rugged bridge-type underbracing is engineered for your load requirements—with a comfortable margin of safety.

Car loading, right angle—For fast, straight-run loading, place the Yard Ramp right angle to the car. Safety hooks grab the sides of the car, hold the ramp securely.

Car loading, parallel—When track-side space is limited, Magcoa solves

the problem by using a portable magnesium table, a Dockboard and a Yard Ramp. Place the table at the car-door, and run the Yard Ramp up to it alongside the car. The Dockboard completes the set-up for fast, safe loading. The magnesium table features rugged bridge-type construction, fork slots to facilitate movement by lift truck, safety tread deck . . . and removable safety curbs which permit simultaneous loading from two or even three sides.

Trailer loading—Same easy, fast, safe operation, the same substantial cash benefits—in using the Yard Ramp to load trailers from the ground. The hydraulic lift raises the Yard Ramp into place; and a rugged chain-hitch holds it there. This versatile method unravels congestion on your stationary ramp, ends any need for additional facilities.

Wide range of sizes and capacities. Five standard sizes of Yard Ramp: lengths to 36 feet; widths, 60 and 70 inches; weights, 1,150 to 1,950 lbs.; capacities to 16,000 lbs.; or a "special" if required.

What's your loading problem? Is lack of ramp facilities slowing your yard handling? Big demurrage bills? Idle lift trucks and operators? Or, is yours a dock problem? Low rail dock? Low truck dock? Narrow, congested dock? Spilling or damaging loads?

Planning the dock for a new plant or warehouse? Modernizing an old dock? Switching to higher-capacity lift trucks or pallet trucks?


Whatever the loading problem, the odds are 1000 to 1 that your local Magcoa Representative has encountered it before—and solved it!

A Suggestion: Send for our free Yard Ramp bulletin and our new bulletin, "What to do about Difficult Docks." They are loaded with practical, helpful ideas.

MAGNESIUM COMPANY OF AMERICA

MATERIALS HANDLING DIV.
EAST CHICAGO 3, INDIANA

Representatives in principal cities

	Produced in Canada by Magcoa Limited, 277 Rippling Ave. South, Toronto 14, Ontario. Phone: CH4ford 1-1311
	<input type="checkbox"/> Please send Yard Ramp Bulletin <input type="checkbox"/> Please send "Difficult Docks" Bulletin
Name and Title _____	
Company _____	
Address _____	
City-Zone-State _____	

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Circle No. 7 on Card, Facing Page 69, for more information

No other truck DESIGNED LIKE A

TRUCK MAKE	ADVERTISED GROSS H. P.	GROSS H. P. AT GOVERNED R. P. M.	100,000 MILE OR 1 YEAR WARRANTY	WET SLEEVE	HIGH VELOCITY COOLING	BOTH FULL FLOW & BY-PASS OIL FILTERS
REO	220 at 3200	220 at 3200	YES	YES	YES	YES
TRUCK "C"	195 at 2600	195 at 2600	NO	NO	NO	NO
TRUCK "G"	225 at 3200	215 at 2800	NO	NO	NO	NO
TRUCK "I"	212 at 3000	201 at 2600	NO	NO	NO	NO
TRUCK "M"	219 at 2400	206 at 2100	NO	NO	NO	NO
TRUCK "M"	205 at 2100	205 at 2100	YES	NO	NO	NO
TRUCK "W"	200 at 2900	200 at 2900	NO	NO	NO	NO

No other GAS or LPG truck engine is backed by a 100,000 mile warranty . . . LIKE A REO!

Reo Gold Comets deliver more "usable horsepower" to the wheels—more load-pulling power that pays off on the job. And these revolutionary wet-sleeve wonder engines continue to deliver new-engine power thousands of miles after conventional engines are completely worn out.

Under all operating conditions, Reos are unmatched for extra-trip speed, cost-cutting economy, maintenance-free long life.

When you buy Reo trucks you don't gamble on engine performance . . . you buy *proved performance*—backed by Reo's own 100,000 mile or 1 year warranty.

No other truck manufacturer offers you such positive assurance of quality and long life.

REO MOTORS, INC.

LANSING 20, MICHIGAN • TORONTO, ONTARIO

SUBSIDIARY OF **BOHN** ALUMINUM AND BRASS CORPORATION

engine is REO GOLD COMET

OIL TEMPERATURE STABILIZER	POSITIVE EXHAUST VALVE ROTATORS	VALVE SEAT INSERTS (INTAKE & EXHAUST)	4 BARREL CARBURETOR	DUAL EXHAUST	AUTOMATIC CHOKE	POSITIVE MECHANICAL GOVERNOR	POSITIVE CRANKCASE VENTILATION
YES	YES	YES	YES	YES	YES	YES	YES
YES	YES	NO	NO	NO	NO	YES	YES
NO	NO	NO	NO	NO	NO	NO	YES
NO	YES	NO	YES	NO	NO	NO	YES
NO	YES	NO	NO	NO	NO	YES	NO
NO	YES	YES	—	NO	—	YES	NO
NO	NO	NO	NO	NO	NO	NO	NO

\$AVES \$ \$ \$ \$!

**Overhaul at Fraction of Cost
and Time of Other Makes**

Revolutionary wet-sleeve construction cuts downtime 50%! Any mechanic can restore a Reo Gold Comet to factory-new tolerances in half the time and at a fraction of the cost of overhauling conventional gas or Diesel engines.

Complete parts kit at \$170.91 (list) for Gold Comet sizes; \$238.75 (list) for V-8s. No reboring or piston fitting required.



The Bigger Your Load, the Bigger Your Pay



Behind a

REO

"BIGV"

"Payload-Engineered" Trucks and Tractors

Ship fast

OVERNIGHT your shipment speeds from coast to coast on United's "Big Lift" DC-6As!

RADAR, exclusive on United's DC-6As, means faster, smoother flight, on-time dependability!

Ship sure

SPECIAL PALLETS, with recessed wheels, speed loading and unloading, help protect the load!

TIE-DOWNS, strongest in any cargo plane, keep even the heaviest shipments secure!

Ship United

RAF—Reserved Air Freight—guarantees you space dependability on all United equipment.

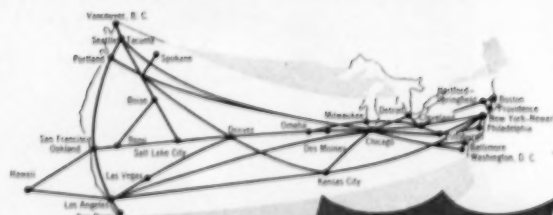
TELEMETER flashes your Airbill in advance of delivery, means faster pickup at destination.



Examples of United's low Air Freight rates per 100 pounds*

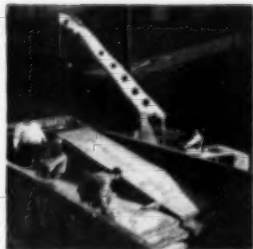
CHICAGO to CLEVELAND	\$4.78
NEW YORK to DETROIT	\$5.90
DENVER to OMAHA	\$6.42
SEATTLE to LOS ANGELES	\$9.80
PHILADELPHIA to PORTLAND	\$24.15
SAN FRANCISCO to BOSTON	\$27.00

*These are the rates for many commodities. They are often lower for larger shipments. Rates shown are for information only, are subject to change, and do not include the 3% federal tax on domestic shipments.



For service or information, call the nearest United Air Lines Representative. Write for free Air Freight booklet, Cargo Sales Division, Dept. D-7, United Air Lines, 5959 S. Cicero Ave., Chicago 38.

Chuting The NEWS



The Cover

Not all the news coming off the waterfront these days involves strikes, corruption, or law of the jungle—modernization is the big story. Through the use of modern mechanical handling equipment, stevedoring is coming of age. The traditional picture of long queues of men carrying cargoes on their backs is fast disappearing.—See Page 38.

Interstate Commerce Commission Announces Modified Brake Regulations; Effective Date is June 30

The ICC on May 29 released a notice entitled "Brake Regulations" together with an order dated May 21 in the proceedings on "Motor Carrier Safety Regulations—Ex Parte MC-40." The new regulations provide certain requirements relating to braking systems on combination vehicles, in addition to previously existing regulations.

Effective date of the order has been set for June 30. Most of the principal requirements, however, have been announced for later dates of effect. Major features of the regulation include:

1. After June 30, 1956, towing vehicle air and vacuum reservoirs must be safeguarded against leakage in the connection to the source of air or vacuum.

2. On and after Jan. 1, 1957, every towing vehicle must have means for keeping its brakes operative in the event of breakaway.

3. After Aug. 31, 1956, every new vehicle, and after Dec. 31, 1956, every vehicle towing an air braked trailer shall have both an automatic and a manual means of activating the emergency features of the trailer brakes. After Dec. 31, 1956, every vehicle towing a vacuum-braked trailer must have a second control device for emergency trailer braking.

4. Air brake systems installed on towed vehicles manufactured after Aug. 31, 1956, must have devices to safeguard the air supply against back-flow through the supply line.

5. After Dec. 31, 1956, every towing vehicle using vacuum brakes shall have an audible or visible low-vacuum warning device.

(A complete outline of the new regulations will be presented in the October issue of DISTRIBUTION AGE.)

(Please Turn Page)

Panel on Education Requirements and Opportunity for Advancement in Traffic Highlight DNA Meeting

Delta Nu Alpha's Spring Meeting, in Houston, Tex., late in May, attracted a record attendance of more than 400 delegates. A panel discussion on "Education for Transportation, Traffic Management, and Regulatory Activities" highlighted the meeting.

The panel was moderated by John W. Scott, executive vice president of DNA and vice president, traffic, of the Kansas City Southern Railway. The panel was made up of a representative group of leaders in the field of traffic and transportation. Included were:

C. J. Goodyear, president of the AST&T and traffic manager of Reading Anthracite Co.; Lawrence A. Pomeroy, Jr., president of ATC and traffic manager National Malleable and Steel Castings Co.; John R. Mahoney, past president of the Association of ICC Practitioners and a New York attorney; E. G. Plowman, chairman of the

Board of the National Defense Transport Association and vice president, traffic, United States Steel Corp., and James F. Holtzer, second vice president of DNA and a representative of Riss & Co., Inc.

In an address before a luncheon session at the meeting, ICC Commissioner Everett Hutchinson defended the ICC's history of regulatory activity and outlined what he called "the real challenge for the future."

Swanson New AAR Unit Chairman

Carl E. Swanson, of the Chicago, Burlington & Quincy Railroad, last month was elected chairman of the Purchases and Stores Div., of the AAR. Swanson was chosen at the closing session of the organization's annual meeting. He succeeds Alfred N. Laret, of the St. Louis-San Francisco Railway.

Chuting the News . . .

(Continued from Preceding Page)

ICC Bureau of Motor Carriers Reports Road Check Results; Defects Found in 90 Per Cent of Vehicles

The Bureau of Motor Carriers of the ICC last month announced that its nationwide road check of interstate motor vehicles showed that 7,021, or 90.8 per cent of the 7,734 vehicles checked, had one or more defects or deficiencies.

The five-day check by 131 district supervisors and safety inspectors of the Bureau's field staff was made to obtain information for the Commission on the extent of non-compliance with ICC safety regulations. Each vehicle was checked as to 58 possible violations.

The Bureau's data showed the following: Defects in service brakes, 656 vehicles; defects in tubing or hoses leading to air brakes, 1,142; violations of the rule requiring that drivers maintain logs of their driving and on-duty time, 3,541.

Also, violation of the rule re-

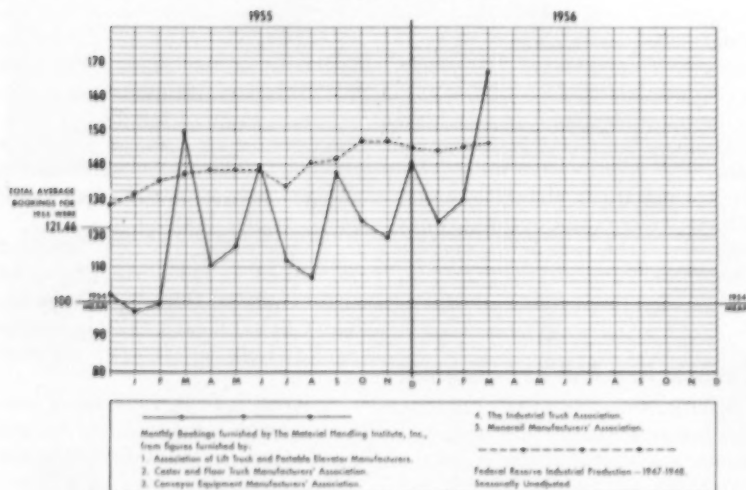
quiring drivers to carry a doctor's certificate showing they met the Commission's physical requirements, 2,448; defective headlights, 203; defective stop lights, 1,750; defective tail lights, 1,189; defective steering mechanism, 415; defective tires, 333.

—DA—

Chain Store Traffic League

F. M. Daly, of J. J. Newberry Co., was elected president of the Chain Store Traffic League at the League's Annual Meeting recently in Kansas City, Mo. Other officers named were: E. G. Twist, J. C. Penney Co., Eastern vice president; Grant L. Moran, Western Auto Supply Co., Western vice president; H. L. Glasgow, T.G.&Y. Stores Co., Southwestern vice president, and J. M. Cody, Butler Brothers, chairman of the Executive Committee.

Bookings Soar in March



Bookings of material handling equipment manufacturers soared to a high of 166.14 in March, according to The Material Handling Institute's Monthly Bookings Index. This represents a 36.58 point increase over February bookings of 129.56. Although March is usually a high-bookings month, the March 1956 figure represents a new high over a three-year period, exceeding both the 1954 and 1955 March bookings

News Briefs

The Illinois Central Railroad has announced expansion of its piggy-back service between Chicago and New Orleans and Memphis and New Orleans.

Mason Dixon Lines, Inc., has announced construction of a new terminal, in Knoxville, Tenn. The terminal's 15,000-sq ft loading platform is equipped with an in-floor truck-dragging system. The terminal can load or unload simultaneously 42 units.

The Boston & Maine Railroad on May 1 inaugurated piggy-back service between Portland and Boston, Portsmouth and Boston, Manchester and Boston, and Fitchburg and Boston.

The Baltimore and Ohio Railroad has announced a non-mechanical, dry ice refrigerated truck trailer to be used in the railroad's piggy-back operations.

A one-week Pilot Conference on Highway Management will be held on the campus of Cornell University, Ithaca, N. Y., beginning July 15. The conference will be sponsored jointly by AASHO and NHUC.

The Tenth Anniversary meeting of the American Society of Traffic and Transportation will be held at the Fairmont Hotel, San Francisco, Calif., on Sept. 20-21.

Three possible landing sites in Port of Los Angeles for the projected truck-trailer roll-on, roll-off type of vessels were inspected last month by A. M. Lebbeus Curtis, USN, ret., president of Pacific Trailerships, Inc., which propose to operate between Los Angeles and San Francisco within two years.

Edward W. Love, Bristol-Myers Product Div., has been appointed vice chairman of the Packaging Institute Technical Committee Production Div.

—DA—

ATA Equipment & Maintenance Council Elects New Officers

Officers for the coming year were elected by ATA's Equipment and Maintenance Council at its Annual Meeting held in Chicago last month. J. B. Callan, Central Freight Lines, Inc., was elected chairman. He succeeds N. L. Parks, Dixie Highway Express, Inc.

Other officers elected were: W. W. Vandercook, F. J. Boutell Drive-away Co., first vice-chairman; Walter Neumann, The Willett Co., second vice-chairman; George R. Schmidt, Hillside Transit, Inc., third vice-chairman, and John C. Hale, Refiners Transport & Terminal Co., treasurer.

Robert J. Bayer Dies, Was AST&T Board Chairman

Robert J. Bayer, chairman of the Board, American Society of Traffic and Transportation, died at his home in La Grange, Ill., on June 5. Mr. Bayer, for many years a leader in the traffic and transportation field, was editor of *Traffic World* and vice president and assistant to the president, Traffic Service Corp.



Mr. Bayer was president of the AST&T in 1953 and 1954, and became chairman of the Board in 1955. He had also served as director of public relations for the Transportation Association of America, a member of the Board of Directors of the Society of Industrial Packaging and Materials Handling Engineers, a member of the Board of Directors of the Associated Traffic Clubs of America, and a member of the Traffic Club of Chicago and the Transportation Club of Chicago.

Byron W. Saunders, associate professor, College of Engineering, Cornell University, has been re-elected chairman of the College-Industry Committee on Material Handling Education.

ICC Honors Col. Johnson

The ICC on June 4 paid special tribute to Col. J. Monroe Johnson at ceremonies upon his retirement after 21 years of government service. He had been an ICC commissioner for the past 16 years. Following the ceremony, Col. Johnson's successor, Donald P. McPherson, Jr., took the oath of office.

Reefer Tests Measure Trailer Cooling Efficiency; Point up the Need for Further Study of Methods

A practical progress report on truck-trailer body refrigeration and insulation was presented at the recent Regular Common Carrier Conference meeting at Edgewater Park, Miss.

While all the trailers reached the objective originally established for the test (maintaining zero degree temperature in an empty trailer parked in an open lot), the demonstration also pointed up the need for more study to develop standard methods of testing and rating the efficiency of reefer trailers.

Conducted by the Truck Trailer Manufacturers Assn. at the request of the Automotive Equipment Development Committee of ATA, the report took the form of a three-part demonstration.

In the first test, an electric heater and fan was installed. Electric power was fed to the heater and the resulting heat circulated with the fan until the temperature in the trailer was raised and stabilized to a predetermined level. The interior temperature was maintained at this level, well above the outside temperature, and the amount of electrical current required to maintain the temperature was measured.

Results of this test generally were consistent, with the observed relative heat transmission values reported for the trailers as a group ranging between 75 and 104 Btu's per hour.

Results of the second test, in which the temperature in each trailer was first made equal with the outside temperature and then dropped to zero, were somewhat less uniform. One trailer reached zero in 2 hr, 49 min.

During the heat loss test, temperatures in the trailers ranged from 120 to a maximum of 151 deg.

All trailers, however, were able to reach and maintain zero temperature in a static condition without commodity load and with the outside temperature at 90 deg.

The final or warm-up test was started by turning off the refrigeration units at midnight—all trailer temperatures being approximately zero—and taking readings at frequent intervals as the temperatures rose. Here again performance of the various trailers was reasonably uniform in that by 11 am, or 11 hours later, the temperatures in the interiors ranged from a low of 57 deg to a high of 75 deg.

(Please Turn Page)

Interior view of the instrument truck furnished by the National Bureau of Standards for the recent highway equipment cooler tests. Trailers used in the test were furnished by Dorsey Trailer Co., Fruehauf Trailer Co., Highway Trailer Co., Lufkin Trailer Co., Miller Trailer Co., Great Dane, Trailmobile



Chuting the News . . .

(Continued from Preceding Page)

Legislative Line-up

Following is a brief summary of legislative items pending in Washington. The status reported is as of June 10.

HIGHWAY CONSTRUCTION—Conferees from Senate and House were expected to work the construction measure, HR 10660, into shape for President Eisenhower's signature before July 1. Major differences, such as the apportionment of federal-aid funds under the program, appeared in the Senate and House versions, but these were believed ripe for settlement.

PHANTOM FREIGHT—No action is underway or planned in the House Commerce Committee that would lead to approval of HR 528.

POSTAL RATES—A new postal rate increase bill, HR 11380, replaces HR 9228 and is reported by the House Post Office Committee. House floor vote on this measure before the end of July 1 was predicted.

SHIP CONSTRUCTION—Senate

Commerce Committee charts now move toward approval of S. 3223. House Merchant Marine Committee votes to report H. J. Res. 614, to authorize construction of a new-type merchant ship.

SHIP MORTGAGES—No new work is done by Senate Commerce Committee on S. 3224. House Merchant Marine Committee continues to await U. S. Commerce Dept. statement of position on HR 5109.

TRANSPORT POLICY—Hearings on HR 6141 and related bills before the House Commerce (Harris) subcommittee ended on June 20. In its original form, HR 6141 is going nowhere, and it is questionable whether a revised version will be reported. Better prospects are seen for a measure, HR 525, that would remove Section 22 rate-making authority.

TRIP LEASING—Chances are good that House Commerce Committee will report S. 898, in revised form, in time for a floor vote this year.

Marine Inventory Assn. Names Smith President

Ernest Smith, of Grace Line, Inc., was installed as president of the Marine Inventory Association at that group's Eighth Annual Dinner, in New York, on June 5. Other officers installed were:

Arthur Lenz, Farrell Lines, Inc., first vice president; Helen Callahan, Seas Shipping Co., second vice president; Frank Wilcke, American President Lines, secretary-treasurer, and Hugh Gastaldi, U. S. Lines, Inc.; Joseph Crowley, Moore McCormack Lines, Inc., and Theodore Voelter, Isthmian SS Co., Inc., governors.

The Packaging Institute's industry-wide Bag Committee met in Pensacola, Fla., May 23-25. The agenda included practical tests for bursting strength, wear and tear of bags, measurement of finished, automatic filling and closing, and materials and methods.

Club Briefs

Norman B. Shikes, of RCA Corp., and Frank M. Ware, of Rohm & Haas Co., presented "Case Studies in Materials Handling" at the last meeting of Philadelphia Chapter, AMHS.

R. M. Pilon is new president of the Industrial Traffic Managers Association of Baltimore. Other officers are Roy L. Gorsuch, vice president, and Harry V. Kraft, secretary-treasurer.

Rear Admiral John Broder Moss, U.S.N., ret., spoke at the last meeting of the Southern California Div., SIPMHE.

Bernie Schaeffer is new president of Connecticut Alpha Chapter, Delta Nu Alpha. Other officers are: Pete Tessier, first vice president; Gene O'Connell, second vice president; Pat Sorrentino, treasurer, and Frank Gab-inelle, secretary.

New officers of the Philadelphia Chapter, Delta Nu Alpha, are: Edward Wilson, president; Craig Armstrong, first vice president; Frank Green, second vice president; Joseph Queenan, secretary, and Charles Koob, treasurer.

New officers of the Traffic Club of Eastern Connecticut are: Robert C. Woodmansee, president; Edward G. Snow, Jr., first vice president; G. J. Phillips, second vice president; W. W. Lyman, treasurer, and Louis P. Abrams, secretary.

Stuart Whisner, vice president of Chicago Express Co., spoke at the 25th Anniversary Dinner of the Women's Traffic Club of New York.

New officers of the Traffic Club of Houston are: A. W. Huffman, president; Joseph Spear, first vice president; M. W. Matthews, second vice president; J. M. Brock, secretary, and J. I. Kennedy, treasurer.

New officers of the Chesapeake Chapter, DNA, are: Dale Gordon, president; Edward Fogler, first vice president; Phil Provins, second vice president; Don Dettor, secretary, and E. N. Page, treasurer.

Rate Increases Announced

Five ship conferences operating between the United States and Canadian Atlantic and Gulf Ports and the East Coast of South American countries have announced that effective Aug. 6 freight rates will be increased approximately ten per cent. The conferences are: River Plate and Brazil Conferences; River Plate-U. S.-Canada Freight Conference; Brazil-U. S.-Canada Freight Conference; Mid-Brazil-U. S. Canada Freight Conference and North Brazil-U. S. Canada Freight Conference.

Brown Trailers, Inc., of Spokane, Wash., is marking the 25th anniversary of its production of the first aluminum truck body. The first body, manufactured in 1931, was sold to the Spokane City Schools.

ATA Freight Claims Council Conducts Workshop Sessions

Four workshop sessions were conducted at the Annual Meeting of the National Freight Claims Council, ATA, June 19-21 in Cleveland. Council members were divided into four groups and assigned separate meeting rooms. Four selected panels rotated to each of the groups and conducted 90-minute sessions.

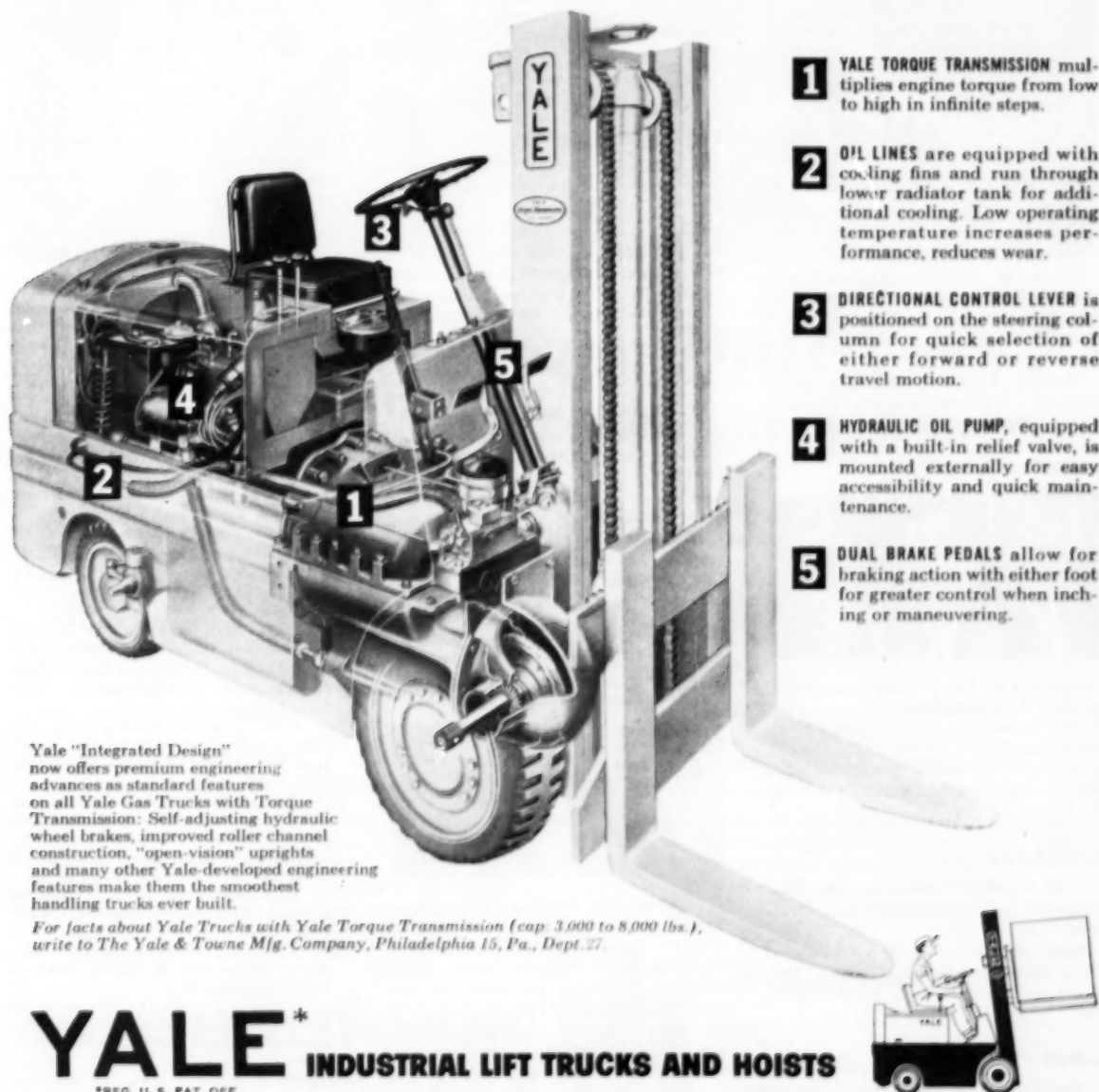
Panel moderators were: "General Office Claim Department Functions," Max Cooke, McLean Trucking Co.; "Education and Training," J. L. Boies, Carolina Freight Carriers Corp.; "Prevention of Loss of Entire Package," Harry C. Bulloch, Hill Lines, Inc.; and "Claim Liability and Freight Claim Rules," R. R. Sigmon, of the Claim Council.

Yale Gas Truck with **YALE** *Torque Transmission* [FULLY AUTOMATIC]

GIVES INSTANT POWER WHEN NEEDED. Yale Torque Transmission automatically responds to increased power demand...supplies the extra needed power for fast starts and grade climbing...assures a smooth, quick handling operation—even when the truck carries a capacity load.

PERMITS PERFECT INCHING CONTROL. With Yale Torque Transmission the operator can 'inch' the truck slowly—at the same time rev up the engine for fast lifting speeds. The result is a smooth, coordinated stacking operation...less "stop-and-start" in high-cycle handling.

GUARANTEES EASE OF OPERATION. The operator's job is easier because Yale Torque Transmission is fully automatic—no more foot clutching or shifting of gears! Lowered cowl, "open vision" uprights and a recessed, adjustable seat add to the visibility and protection of the operator.



Yale "Integrated Design" now offers premium engineering advances as standard features on all Yale Gas Trucks with Torque Transmission: Self-adjusting hydraulic wheel brakes, improved roller channel construction, "open-vision" uprights and many other Yale-developed engineering features make them the smoothest handling trucks ever built.

For facts about Yale Trucks with Yale Torque Transmission (cap. 3,000 to 8,000 lbs.), write to The Yale & Towne Mfg. Company, Philadelphia 15, Pa., Dept. 27.

YALE^{*} INDUSTRIAL LIFT TRUCKS AND HOISTS

*REG. U. S. PAT. OFF.

Gas, Electric & LP-Gas Industrial Trucks • Worksavers • Warehousemen • Hand Trucks • Hand and Electric Hoists

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JULY, 1956

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Officers of New Transportation Club



The above picture was taken at installation ceremonies of the newly formed Central Valley Transportation Club, of Modesto, Calif. Shown are (front row, l to r): R. T. Patterson, AT&SF Railway; L. A. Day, Union Pacific Railroad; C. E. Edin, John Inglis Frozen Foods Co.; T. K. Beard, Modesto & Empire Traction Co.; J. D. Rich, Southern Pacific Co. Back row l to r: O. A. Cerutti, John Inglis Frozen Food Co.; L. Hardaway, Jr., Modesto & Empire Traction Co.; B. Draper, Patterson Frozen Foods; J. H. Stokes, Swanson's Trucking Co.

Men in the News

—Traffic

T. E. Richards—promoted to general traffic manager, Morse Chain Co., Ithaca, N. Y.

Frank L. Merwin—appointed general traffic manager, and George W. Cantwell—named traffic manager, American Smelting and Refining Co., New York, N. Y.

Stanley L. Vale, Jr.—new traffic manager, National Electric Products Corp., Pittsburgh, Pa.

—Air



Leonard G. Hunt (left)—named executive vice president; James J. McNulty (center)—elected vice president-operations; John C. Emery (right)—elected vice president-sales, Emery Air Freight Corp., New York, N. Y.

—Highway

L. P. Chaffar—named new director, Consolidated Freightways, Inc., Portland, Ore.

Sam Merion—appointed general sales manager, Strick Trailers, Div. Fruehauf Trailer Co., Philadelphia, Pa.

—Rail

Anthony P. Donadio, general attorney for Baltimore and Ohio Railroad

—named chairman, Commerce Law Committee, AAR.

T. E. Johnson—promoted to assistant to general manager, Baltimore and Ohio's Central Region at Pittsburgh, Pa. J. A. Curtis—promoted to superintendent of the Newark, O., division.

—Water

W. Mansfield McCowan—named general sales manager of both Pan-Atlantic and Waterman Steamship Corps.

William A. McLean—appointed vice president and general manager, Gulf-Florida Terminal Co. and Waterman and Pan-Atlantic Steamship Corp., Tampa, Fla.

—Materials Handling

E. E. McVeigh—named manager sales engineering, Baker-Raulang Co., Cleveland, O.



J. Frederick Bechtel (left) Claud Fenn (center) and John R. Wood, Jr. (right)—named vice presidents, Clark Equipment Co., Battle Creek, Mich. Bechtel continues as head of the firm's legal staff, Fenn in charge of the plant's firm in Buchanan, Mich., and Wood as company treasurer.

Robert W. Marvin—elected vice president, Dravo Corp., Pittsburgh, Pa.

Coming Events

July 1-3—National Wooden Pallet Mfr's Assn., 10th Annual Meeting, Williamsburg Inn, Williamsburg, Va.

July 2-5—Canadian Warehousemen's Assn., 36th Annual Convention, Digby Pines, Nova Scotia

July 10-12—Sixth Western Packaging & Materials Handling Exposition, Pan Pacific Auditorium, Los Angeles, Calif.

July 17-18—Middlewest Shipper-Motor Carrier Conference, 15th Regular Meeting, Rockford, Ill.

July 18-20—Truck-Trailer Mfr's Assn., Summer Meeting, Edgewater Beach Hotel, Chicago, Ill.

July 24-27—National Assn. of Railroad & Utilities Commissioners, Annual Convention, San Francisco, Calif.

July 25-26—State Truck Assn., ATA, National Conference, Mark Hopkins Hotel, San Francisco, Calif.

Aug. 5-8—Movers' Conference of America, Annual Meeting, Chicago, Ill.

Sept. 10-12—Packaging Institute, Annual Forum, Statler Hotel, Cleveland, Ohio

Sept. 11-14—Packaging Machinery Mfr's Institute, Packaging, Machinery & Maintenance Exposition of 1956, Public Auditorium, Cleveland, Ohio

Sept. 13-15—Southeastern Warehousemen & Movers' Assn., Annual Convention, Balmoral Hotel, Miami Beach, Fla.

Sept. 17-19—Industrial Relations Forum, ATA, Annual Meeting, San Francisco, Calif.

Sept. 17-21—11th Annual International Instrument-Automation Conference & Exhibit, New Coliseum, New York, N. Y.

Sept. 20-21—American Society of Traffic & Transportation, 10th Anniversary Meeting, Fairmont Hotel, San Francisco, Calif.

Sept. 23-26—Produce Packaging Assn., Sixth Annual Conference & Exposition, Miami Beach, Fla.

Oct. 9-11—Armed Forces Military-Industry Symposium on Packaging & Materials Handling, Washington, D. C.

Oct. 13-15—Annual Meeting, Delta Nu Alpha, Sheraton Hotel, Chicago, Ill.

Oct. 14-17—National Defense Transportation Assn., Annual Convention, Hotel Newhouse, Salt Lake City, Utah

Oct. 16-18—National Association of Shippers Advisory Boards, Los Angeles, Calif.

Oct. 17-23—Regular Common Carrier Conference, ATA, Waldorf-Astoria Hotel, New York, N. Y.

Oct. 21-26—American Trucking Assns., Annual Meeting, Waldorf-Astoria Hotel, New York, N. Y. (Executive Committee, Oct. 21-24)

Oct. 22-25—SIPMHE, Annual Convention Exposition, Short Course & Competition, Keil Auditorium, St. Louis, Mo.

Oct. 22-26—National Safety Congress & Exposition, 44th Meeting, Chicago, Ill.

Oct. 24-25—Associated Traffic Clubs of America, 33rd Annual Meeting, Miami Beach, Fla.

Oct. 29-31—Truck Body Equipment Assn., Annual Convention & Exhibit, Sherman Hotel, Chicago, Ill.

Oct. 31-Nov. 1-2—Time & Motion Study and Management Clinic, Industrial Management Society, Hotel Sherman, Chicago, Ill.

Nov. 12-14—Grocery Mfrs. of America, Annual Meeting, Waldorf-Astoria, New York, N. Y.



Now! New Heavy-Duty V-8's!

With the most GO under any truck hood!

Powered to pace today's traffic!

These new 206, 226, 257 hp. V-8's in the new INTERNATIONAL V-Line have a "built-in" swift response with maximum payload. You get more go at lights . . . more "keep going" on the hills with shifting greatly reduced . . . higher average road speeds within legal limits . . . top performance where it's needed most.

In short, the new INTERNATIONAL V-Line is built to set new highs in your profit column!

Tested and proved as no other trucks have ever been!

Developed and tested in the lab, then put through more than 1,000,000 test-track miles, and in 2,500,000 on-the-job miles in 39 different truck vocations.

These tests were made by profit-minded truckers with a gimlet-eye on mileage, hauling time and repair bills. Their conclusions—"GREAT, on every count!"

3 Great new INTERNATIONAL V-8 engines!

	V-401	V-481	V-549
Displacement	400.9 Cu. In.	461 Cu. In.	548.7 Cu. In.
Bore and Stroke	4 1/8 x 3 3/4	4 1/8 x 4-5/16	4 1/2 x 4-5/16
Maximum hp.	206 @ 3600	226 @ 3600	257 @ 3400
Maximum Torque	355 @ 1800-2000	420 @ 1600	505 @ 2000

Pressure Controlled-Flo Cooling! Full circulation, fully controlled. Cold weather by-pass.

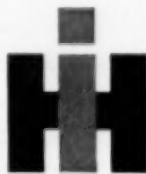
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Exhaust Valve Faces and Seats of Stellite.

19 Pound Aluminum Flywheel Housing.

Get all the facts behind this great new truck story. Send for booklet "New Heavy-Duty V-8 Power Where You Need it Most." Write INTERNATIONAL HARVESTER COMPANY, P. O. Box 7333, Chicago 80, Illinois, or see your INTERNATIONAL Dealer or Branch.

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**All-Truck Built to
save you the BIG money!**

Motor Truck • Crawler Tractors • Construction
Equipment • McCormick® Farm Equipment
and Farmall® Tractors

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**STRUCTO
RACKING**

500 TO 1000 LB. LIFTER

For quick easy stacking
of loads

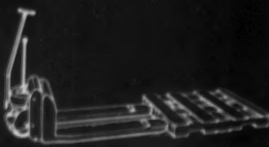


**"ELECTRAULIC"
LIFT TABLE**

For leveling sheet steel or dies
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THE LEVER LIFT
with fingertip lifting lever
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EASY VERTICAL LIFTING



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Specially Designed **COLSON HANDLING EQUIPMENT**

Famous Lift-Jack System

Step up the flow of goods and cut manpower costs with Colson's quality-constructed Lift-Jack System. Actual field tests prove it pays for itself in six months through savings in receiving, shipping and production. Precision engineered for easy steering . . . built for years of long, rugged use. Available in both wood and steel platform skids.

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Here's the fastest, safest, most efficient way to handle drums and barrels. Locks firmly on any size container. Lifts heavy loads easily . . . carries them with perfect balance.

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Reinforced on the underside to carry extra heavy loads. Equipped with heavy duty casters and rigidly bolted handles to last for years beyond the average.



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UNIVERSAL DRUM TRUCK



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RUGGED STEEL PLATFORM TRUCK

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Industry is buying more American Racks than ever before, because no other stationary or portable racks can match American Rack features. For cutting installation and materials handling costs, you can't beat American. Make us prove this fact! Write us today.



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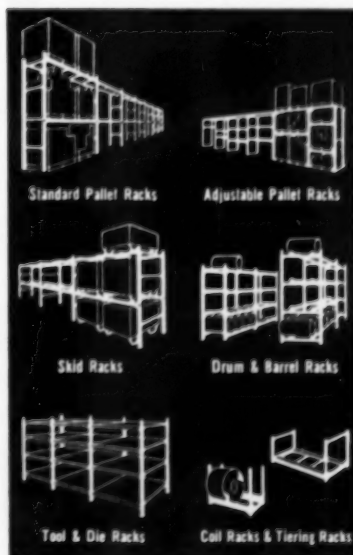


American Standard Pallet Rack installation at the Selden Manufacturing Co., Richmond, Indiana. Another example of better stacking.

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American Die Storage Rack installation at Detroit Engineering & Machine Co., Detroit, Michigan. Another example of better stacking.



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Manufacturers of quality products for automobiles, trucks, aircraft, offices, factories, warehouses, and homes.

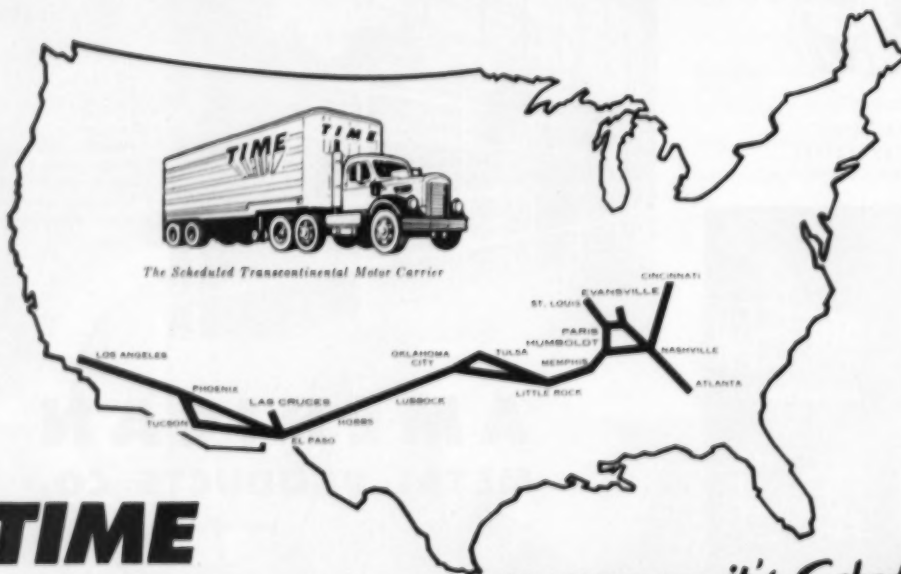
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BETWEEN LOS ANGELES AND
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Call **TIME**

(NOW OPERATING SOUTHEASTERN TRUCK LINES, INC.)



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TERMINALS

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SO DEPENDABLE, *it's Scheduled!*

*the gas truck
that does
more work
because
it spends
more time
on the job!*

BAKER "FG"



here's why...

Every step in the design of the new Baker "FG" gas fork truck was aimed at this end result: Maximum dependable and efficient performance, and longest life. The power plant, for example, is a heavy-duty gas engine designed expressly for rugged industrial truck service, power rated to truck capacity and geared to operate at optimum RPM. Compact rigid power train without troublesome universal joints... split clutch housing for better accessibility... single oil supply for entire assembly... full-floating, self-energizing, self-equalizing hydraulic brakes with one-point adjustment... these are a few of the features that mean *more time on the job*.

Our confidence in the "FG" is backed by a full 6-months' warranty—the only gas truck offering this protection. Capacities up to and including 6000 pounds. Write for specific bulletins.

Baker

handling equipment

THE BAKER-RAULANG COMPANY

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A Subsidiary of Otis Elevator Company

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6G-1

JULY, 1956

27

**"We've Got To Remember To Key This Plant
To Motor Transport...Or It Won't Be Modern!"**



He's right, of course, and his advice is being repeated in new plant conferences like this the country over.

It's significant, to begin with, that the practice of having traffic managers sit in on discussions of plans for new plants is growing. With transportation such a vital part of every business enterprise, this is as it should be.

And with motor transport offering so many advantages over other forms of transportation—like greater flexibility, faster service, less handling, and fewer claims—to mention some of the most im-

portant—it's no wonder that modern traffic managers for the most part are making sure that new or remodeled plants are planned to profit by truck transportation.

Traffic managers can be invaluable in analyzing new plant set-ups from the transportation standpoint and they should be called in to planning sessions early in the game when there is still plenty of time to give consideration to their recommendations.

Traffic managers are in the best position of all to know that only a plant designed to be served by motor transport is a modern plant!



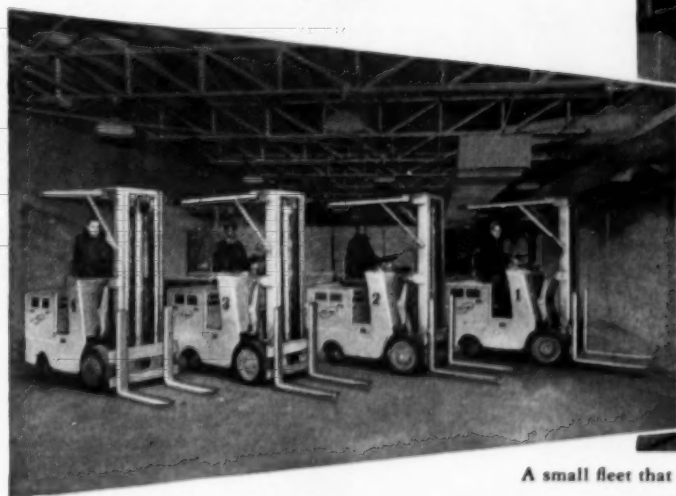
AMERICAN TRUCKING INDUSTRY

AMERICAN TRUCKING ASSOCIATIONS, INC., WASHINGTON 6, D. C.

If You've Got It . . . A Truck Brought It!

MILLION CUBIC FOOT WAREHOUSE

served by just **4 ELPAR TRUCKS**



A small fleet that does a big job. Roof high storage.

Dependable, electric powered ELPAR fork trucks are making performance records at one of the nation's largest cold storage warehouses. All 1,000,000 cu. ft. in the plant are refrigerated. Trucks often work in temperatures of zero to -20°F. There are unloading facilities for 5 freight cars and 20 road trucks.

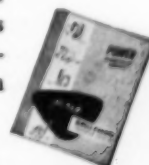
It is remarkable that just 4 trucks perform this huge handling job on a day-after-day basis. Here are the reasons:

1. MODERN HANDLING TECHNIQUES—Complete palletization saves labor, speeds carrying, and simplifies location of stored goods. Also, loads are *high stacked* to the final inch of the 16 foot high ceiling. Profits are collected on ALL space—so valuable in a refrigerated plant.

2. TRUCK DEPENDABILITY—ELPAR trucks have built-in quality that keeps them steadily on the job. Preventive maintenance is easy since ELPAR design features fast accessibility of all assemblies.

3. ELECTRIC POWER—ELPAR trucks are fume free and generate no heat. No radiators to be protected. Many lubrication problems connected with use of gasoline engines in cold areas are also eliminated. (Remember, cool, clean, quiet electric power is tops on ALMOST ALL indoor jobs.)

*Write for Warehousing Case Histories
plus ELPAR Catalog.*



THE ELWELL-PARKER ELECTRIC CO.

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NOT JUST WAREHOUSING —A COMPLETE LOW COST Distribution Service



W. W. Huggett
President

yours at NORTH PIER TERMINAL



● Throw out your storage and distribution problems. Load the load on our shoulders. Ask us to route, schedule, inventory, trace, ship, handle your paper work . . . and report accurately to you.

You'll save and make more money. You'll be sure of safe and prompt delivery. That's OUR responsibility (not yours) for thirty, or 300 shipments, 175 or 17,500 cartons, bales, drums or boxes.

Efficient planning, convenient facilities and internal automation—that's our secret. Ask, we'll send you the facts.

● Choose a Convenient Chicago Location

1. **NORTH SIDE**, 2740 Clybourn Ave.; located on Northwestern and Milwaukee rails, with reciprocal shipping; 200,000 sq. ft. space; 25-truck, 12-freight car loading area; covered platforms; sprinklered; heated; heavy floor load.

2. **SOUTH SIDE**, 95th & Cottage Grove; on mainline of Ill. Central, connects with all southwest, west, northwest and southern rails; 100,000 sq. ft. space of unlimited floor load in ONE STORY; trucks and freight cars loaded and unloaded inside.

3. **DOWNTOWN**, 120 E. So. Water St. (one block east of Michigan Ave.); serviced by N.Y.C. R.R.; ample loading space for cars and trucks; heavy floor loads; mechanized equipment; prompt paper work, inventorying, etc.

● **IN ADDITION**, we offer warehouse and office space in our main building on Lake Shore Drive; have a Barge Dock at 29th & Western; and a Ship Dock at 400 E. So. Water St. and in Navy Pier.

Eastern Rep.: J. Leo Cooke Warehouse Corp., New York, N. Y.
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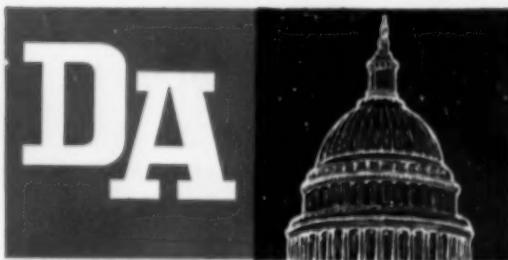
See our complete listing in Classified Section — locations to serve your every need.

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DISTRIBUTION AGE

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**MONEY-
SAVING
Ideas**

WASHINGTON



By Ray M. Stroupe, *Chilton Washington News Bureau*

SHIPPING BILL DIES — Any remaining doubt about the fate of the national transport policy bill, HR 6141, this year is dispelled by Chairman Oren Harris, D., Ark., of the House subcommittee handling the measure. He admits that the original bill is dead, while revisions are uncertain. If the group reports any transportation bill it may be HR 525, to cancel authority for allowing the government special freight rates.

MORE ICC MONEY—Cheering news for the ICC preceded the Senate-House conference in June on the size of the agency's fiscal 1957 budget. In its vote prior to the conference, the Senate recommended a total of more than \$14.8 million, compared with \$13.9 million voted by the House. Senate floor amendments added \$269,000 to permit the ICC to hire additional motor carrier safety inspectors and rail car service agents.

TAKE FEDERAL POSTS — Changes are made in the membership of the CAB and the FMB, following Senate confirmation of two White House nominations. G. Joseph Minetti leaves the maritime panel to become a member of the CAB. Succeeding Mr. Minetti at his former position with Federal Maritime Board is Thomas E. Stakem, Jr., until recently the Assistant Deputy Maritime Administrator.

VOTE ASKED ON DEMURRAGE — Rail lines owning cars are asked by the AAR to vote on a proposal to alter demurrage rates. Charges in the first four days after the 48-hour free period ends would be higher than at present, but fees thereafter would be lower. Intent of the proposal is to raise freight car availability and recognize higher costs of owning cars. ICC would have to make a final ruling on rate changes.

NAVY PLANES LEASED—Aircraft newly leased from the Navy are to be put in service by 16 commercial airlines with bases ranging from the eastern U. S. to Alaska and Hawaii. Navy officials, who turned down 20 other applicants, had requests for 92 of the R4D-R (or DC-3) planes. With CAB cooperation, the Navy allocated two planes each to seven airlines and one each to the remaining nine.

ICC EXEMPTS MOVERS—Household goods movers are exempt by the ICC from certain reporting requirements it placed on Class I common and contract motor carriers last December. A new ICC

action omits the movers from coverage of an order that annual reports be filed on commodities hauled. Before the ICC made its decision, the movers argued that statistics on their specialized traffic would be of no value to the agency.

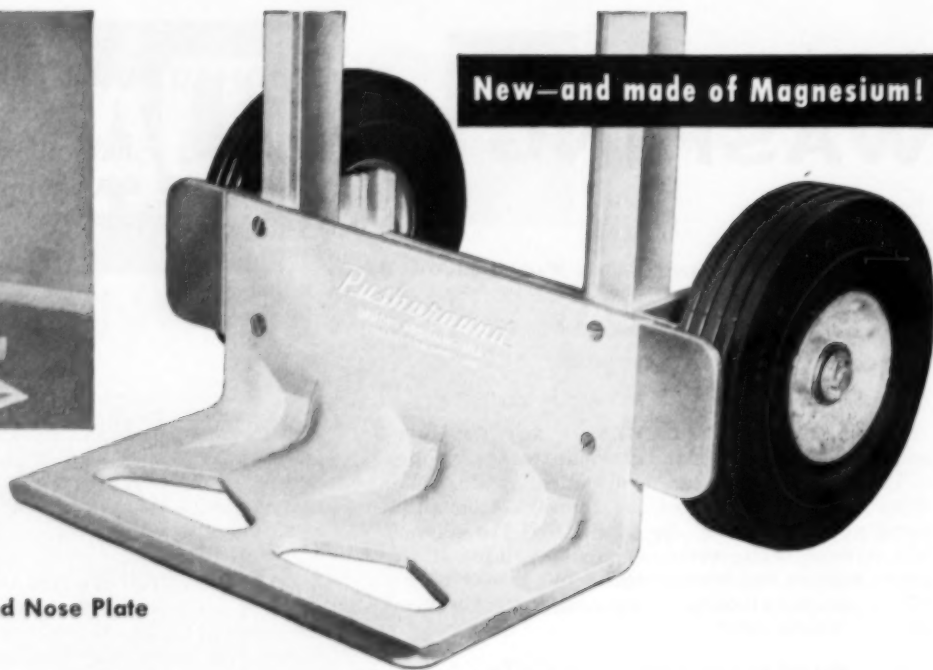
WILL TEACH STORAGE—Training in storage and distribution techniques will be given by the Army at its new logistics center at Fort Lee, Va. Instruction in military procurement, requirements, and maintenance also will be provided, with the procurement course getting underway this month. About 700 students, many of them civilians, are to be graduated each year.

BANS PRICE ZONING—Hard fiber rope and wrapping twine sales practices of a number of ropemakers are covered in a new FTC consent order. FTC had claimed that the Cordage Institute, New York, and its member companies used varying freight differentials to equalize delivered prices in uniform price zones. In agreeing to refrain from matching delivered prices, the ropemakers admit no violation of law.

PLAN NEW MERCHANT VESSELS—Ship operators are ready to have construction begin in the U. S. on some 43 new merchant ships this year, reveals Maritime Administrator Clarence G. Morse. Substantial amounts of federal money will be added to the builders' capital. House and Senate conferees last month were considering a Senate proposal that \$108.8 million be earmarked for ship construction subsidies in fiscal 1957.

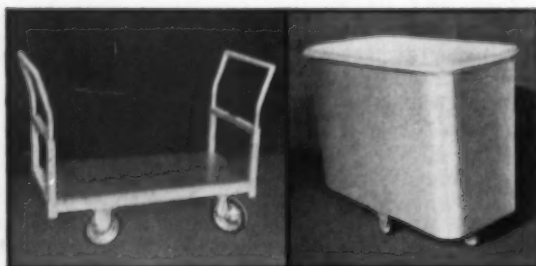
CAN DIVERT TRAFFIC—Continuing authority to direct the movement of freight cars to meet emergency situations is provided in a new ICC order. The agency reappoints Charles W. Taylor, director of its Bureau of Safety and Service, as the official empowered to reroute both loaded and empty cars to aid any railroad that is not able to move traffic over its lines. This order is to be in effect through May 25, 1957.

ATOM CRAFT SOUGHT — Atomic ocean-going ships and new ore vessels for Great Lakes service are popular topics on Capitol Hill. Eisenhower Administration spokesmen prod Congress to permit construction of a nuclear-powered merchant ship before the Russians come out with one.



Exclusive Forged Nose Plate

It's a tough piece of equipment— the Pusharound® Hand Truck



The platform truck (left) and the bin truck (right) are two more light and tough Pusharound products that can help you move heavy objects—easily.

Whatever your need for handling equipment may be—consider the uses you have for any or all light, rugged Pusharound products. In addition to warehouse, terminal and retail uses, the platform and bin trucks pictured above are ideal for handling heavy parts and industrial equipment. The Pusharound bin truck is designed to handle 500 lb. loads, while the platform truck is available in two model variations to handle either 500 or 1200 lb. load capacities.

Because the nose plate is the part on every hand truck that takes most of the load—the nose plate on the Pusharound hand truck is forged, not cast. It is not brittle and *will not break, even under the most punishing conditions.*

And there are no "makeshift" parts on the Pusharound hand truck. Side rails, yokes, axle brackets—all are special Brooks & Perkins' extrusions designed exclusively for Pusharound hand trucks. Protective wheel guards prevent damage to boxes, cartons, bags—anything you handle. Every model is adaptable to 6", 8" or 10" wheels.

It's a tough piece of equipment—the Pusharound hand truck. Write for a Pusharound catalog and for the name of our dealer in your area.

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MAGNESIUM HANDLING EQUIPMENT

HAND TRUCKS • PLATFORM TRUCKS • SHELF TRUCKS • BIN TRUCKS
TRANSFER TRUCKS • GARMENT RACKS • MOBILE CABINETS AND RACKS

BROOKS & PERKINS, INC.

1970 West Fort Street • Detroit 16, Michigan

DEALERS IN PRINCIPAL CITIES

D-3

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Exceptional follow-through

at destination makes

GREYVAN PREFERRED

*for moving household goods—office
equipment—and trade show displays*

Most moves *begin* right—but it's the way they *finish* that determines how satisfactory they are to all concerned.

That's why Greyvan takes special pains to give every move a happy ending by giving each move the same careful attention at *destination* that it receives at origin.

Whether you're shipping the household goods of transferred personnel, office furniture and equipment, or trade show displays, there's a Greyvan representative at *destination* to see that shipping instructions are followed to the letter . . . to handle any special service problems which may occur . . . to make an on-the-spot settlement of almost any claim that may arise—in short, to assure the type of prompt and pleasant completion of the move that makes Greyvan service preferred by transferred personnel and traffic managers alike.

Call your local Greyvan representative today for complete information.

GREYVAN LINES, INC.

57 West Grand Avenue, Chicago 10, Illinois

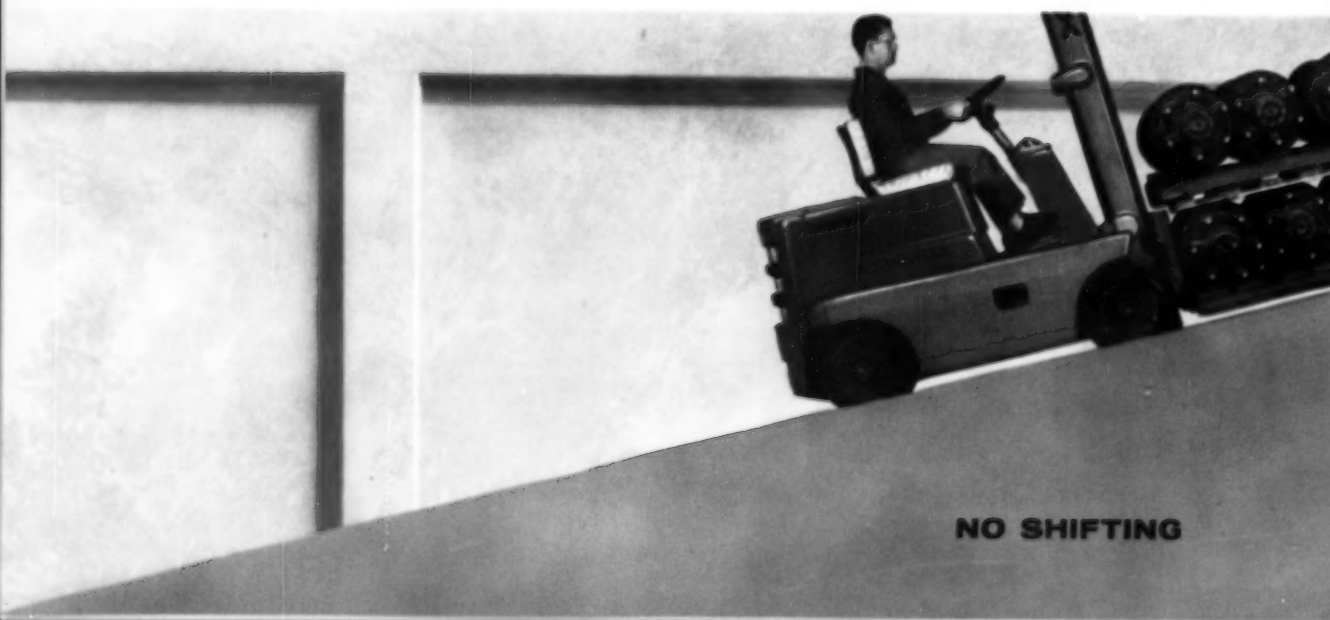
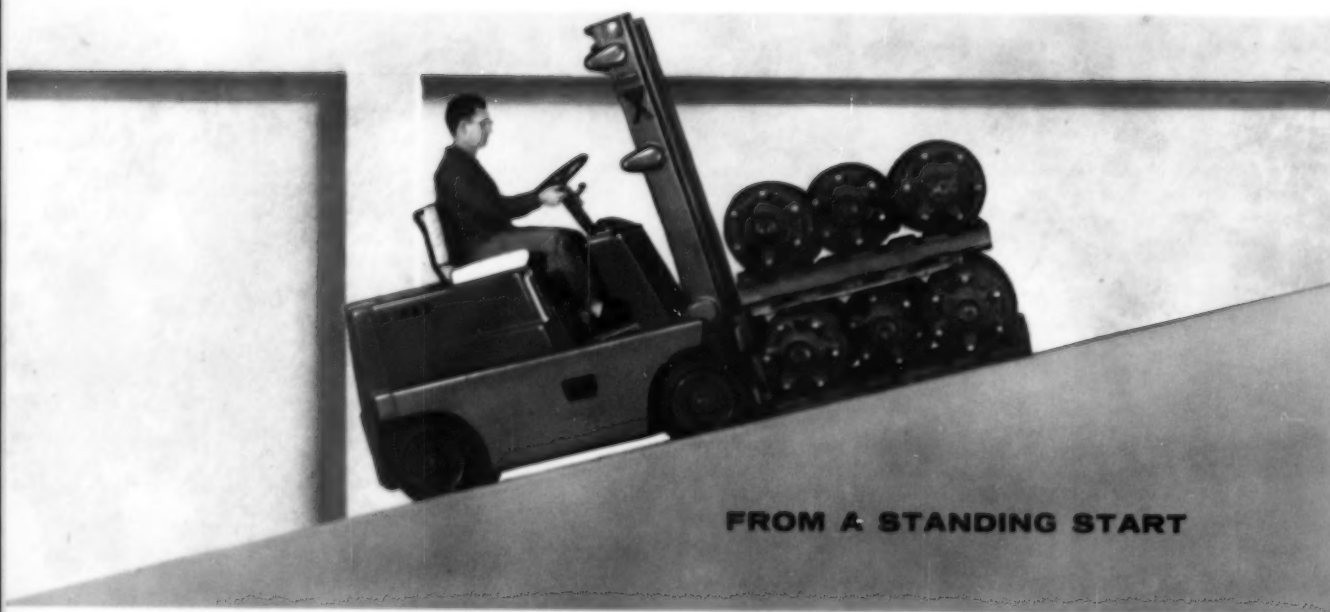
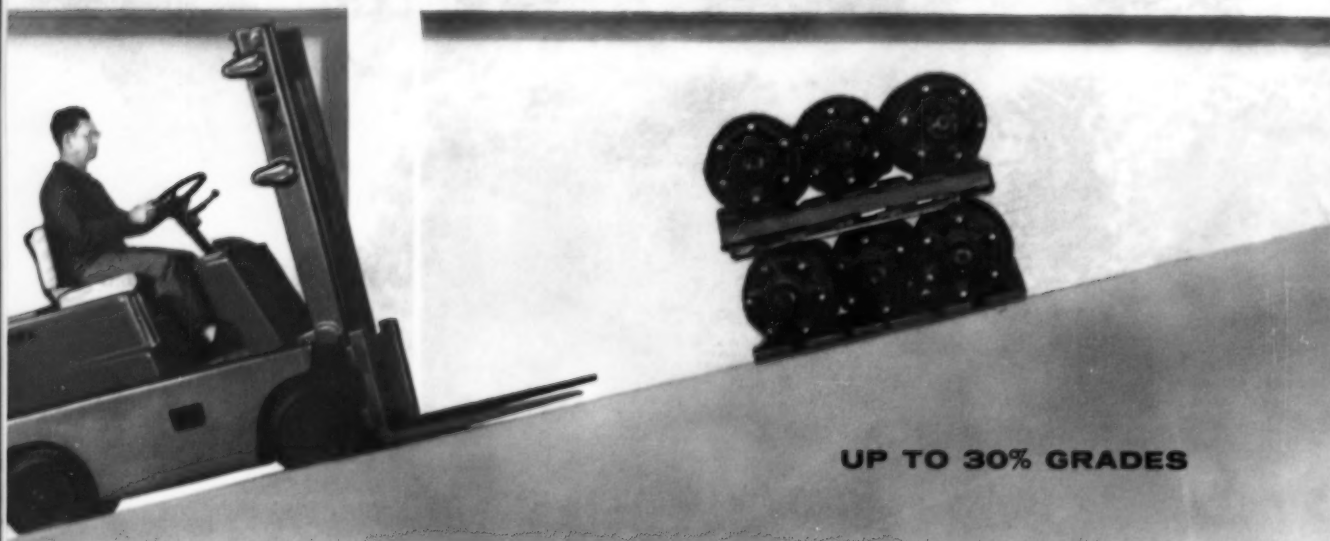
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A Greyhound Lines subsidiary . . .

Greyvan is one of America's leading long-distance moving companies . . . provides dependable, responsible, efficient service by skilled, courteous personnel, using America's most modern moving methods and equipment.





You'll demand more from the new CLARKLIFT... and you'll get it

Chances are, you're pretty well satisfied with your present industrial trucks. So don't see this new Clarklift, don't watch it in action unless you're prepared to become dissatisfied on the spot with your present equipment.

It's not just the most accessible truck ever built for easy servicing. It's not just that drivers rave over its efficient controls and comfortable riding qualities. You'll see immediately that its workhorse performance is superior to anything you may have expected from an industrial truck before. Look at the reasons.

Powerful Hydratork Drive®

More powerful engine coupled with a brand new Hydratork transmission. Incorporates "precise inching" control, transmission filter and a brand new drive axle for efficient, powerful operation.

Safety roller uprights

Heavy channel with nested I-beams provide rugged box-sections for enclosing rollers. Safety is assured, as the rollers are mounted on the outer channel and cannot telescope out of the nested section.

Torque multiplied brakes—self adjusting

Braking force is reduced 35% by applying the brakes through a 4 to 1 reduction at each drive wheel. Brakes never have to be adjusted, as the unique construction incorporates an automatic take-up for lining wear.

Drive and steer tires—same diameter

Proper weight distribution combined with steer tires the same diameter as the drive, greatly improves steering and riding comfort.

Safety deadman seat

Now for the first time on a gas powered truck, the brakes are automatically applied when the driver leaves his seat. Safety is assured, as this second braking system positively holds the truck in place.

12 volt electrical system

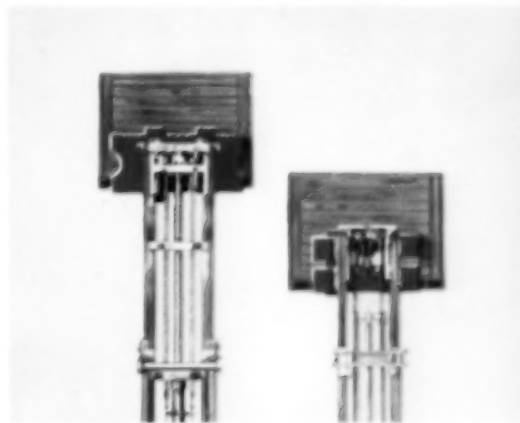
Capacity plus cold weather starting is greatly improved. Just another feature that reflects the modern design incorporated in this all new Clarklift.



OPERATING
AISLE
REDUCED
6 INCHES

Longer wheelbase—narrower aisle

The wheelbase has been increased an average of 7" while the basic truck operating aisle has been reduced an average of 6". This is a great contribution to increased traction, maneuverability and riding comfort.



50% faster lift speeds

Highly efficient safety roller type uprights combined with increased power and precise truck control enable the lifting speeds to be increased as much as 50 per cent. Radial thrust rollers on the fork carriage insure lateral stability to further increase driver control and safety while stacking.



Industrial Truck Division

CLARK EQUIPMENT COMPANY

Battle Creek, Michigan

Modern Way to Measure More Payload



The White 9000



For More Than 55 Years The Greatest Name In Trucks

The White Motor Company • Cleveland 1, Ohio

The White Motor Company of Canada Limited, Toronto

**90 Inches—Front of Bumper to
Back of Cab.**

START measuring your extra earning power in the great new White 9000 with these 90-inches! But don't stop there! There's extra profit in so many ways that you'll want to talk to your White Representative about its many exclusive advantages. Don't delay!

Excellent weight distribution plus the new dimension makes the White 9000 today's greatest payload performer! This White 9000-TD, one of a fleet which B & A Truck Leasing Corp., Richmond, Va. leases to the Halifax Paper Co., weighs less than 4,000 lbs. on the drive axle—under 10,000 lbs. total. The 90-inch dimension (front of bumper to back of cab) permits maximum payload space under today's restrictive laws.

And the important plus: Cummins JT-6B Turbodiesel saves trip time and provides higher sustained speeds on the hills. Outstanding mileage record at lowest maintenance cost.



THE four domestic air cargo lines, whose original experimental certificates of convenience and necessity expired some time ago, have been granted a new lease on life by CAB. Slick Airways, Flying Tiger Line, Riddle Air Lines and American Air Export & Import Co. received new five-year certificates in March.

This renewal action, as far as freight was concerned, was expected. It came as a surprise to some, however, that the Board granted these carriers permission to carry air express for the next five years and air mail for the next year.

A Necessary Service

The Board based its renewal decision on findings that these carriers had provided a useful and necessary service in contributing to the growth and development of air freight, without undue diversion of such traffic from the combination airlines. It also was felt that at least two of the air cargo lines had developed and utilized more efficient and economical equipment, that these specialized carriers provided cost yardsticks, and that they acted as a prod to the combination airlines in developing freight traffic.

Finally, the Board felt that competition had been fostered; thus helping the shipping public at common points by way of lowered rates, improved service, and greater penetration of the traffic potential.

Air Express

In granting the cargo lines the right to carry air express, shipped by the Railway Express Agency, the Board held that mere identity of shipments as air express does not warrant their treatment as something separate and apart from air freight. Further, it took the position that the elimination of the present air express restriction on the all-cargo carriers should benefit not only them but the shipping public and REA; and would not unduly impair the op-

erations of the combination airlines which, heretofore, have been the exclusive carriers of express traffic generated by REA.

Air Mail

In granting permission to the cargo lines to carry air mail experimentally for the period of one year, the Board made it very clear that this was to be purely on a service pay basis. There is, therefore, no chance of these carriers receiving anything in excess of the amount payable by the Post Office Department—at least for the present.

The Board felt that utilization of the cargo lines by the Post Office, to supplement the combination carriers, would afford wider choice of mail carriers at more hours in many cities, and to permit greater flexibility. It also would aid in deciding the best method of moving the total amount of mail, since the cargo airlines have been carrying some surface (3¢) mail as part of the Post Office experimental mail operation for the past year or so.

Moreover, transporting air mail will provide the cargo lines with much needed revenue. The Board seems to hope that this increased revenue will help support cargo operations and enable these carriers to provide an improved service.

Permitting the all-cargo carriers to engage in the air express business seems to be a sound extension of their activity. There is, however, considerable doubt of the wisdom of permitting them to carry air mail of the expedited (6¢ postage) variety.

Mail service cannot be relegated to a subordinate position subject to schedule shifting to meet the demands of freight traffic or to layovers enroute and at connecting points for loading and unloading cargo. Mail is not freight and it demands special handling. The average mail pouch weighs about 20 lb and is ideal for transport on passenger flights.

Historically, the mail has been a part of the passenger business both on the ground and in the air. The fast, reliable and frequent
(Please Turn to Page 99)

New Life for Air Cargo Lines

Although it is difficult to predict the future of air freight, sales, promotion, and research programs should expedite all-cargo development

Stevedores Adopt

Shippers, water carriers, ports, longshoremen gain by



In addition to standard types of handling equipment, stevedoring requires special equipment such as cushioned sling, shown in Figs. 1 and 2, devised by Independent Pier Co. Apex of sling is 20 ft above truck to prevent body damage



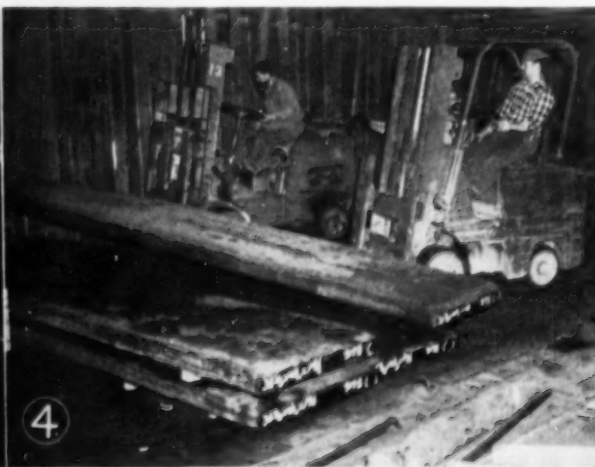
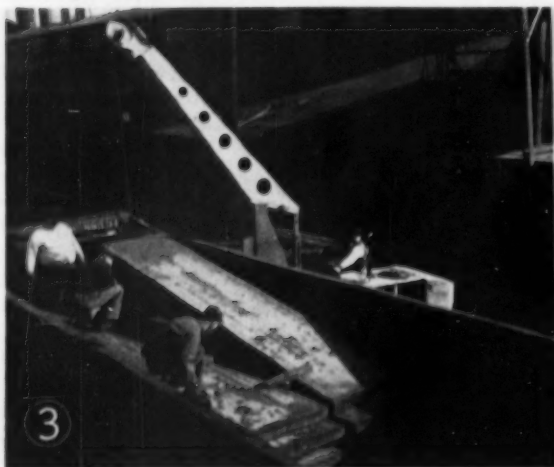
MOST news of stevedoring activities to reach shippers, except those in close contact with the waterfront, is negative. Usually, that news takes the form of lurid stories of strikes, corruption, and bestial battles of brawn. The constructive side has received little mention.

What is not generally known is that stevedoring has come of age. The long queues of men carrying cargoes on their backs—off a steamship to trucks, rail cars, or storage area on a dock or pier—is a thing of the past.

The influence of industrial technical developments, modernization of other transportation industries, and the quest for lower commodity handling costs, have had a beneficial effect on stevedoring. Modern materials handling practices are replacing manual handling.

Now that stevedoring has acquired mechanized muscles, cargoes are unloaded faster and in larger quantities. Damage and

Conventional handling of steel slabs, such as these 10-ft long and 3-in. thick pieces, is by steel crowbar and wood rollers, shown in foreground of Fig. 4. Modern way is by two fork-lift trucks and mobile cranes, as seen in Figs. 3, 4



Mechanized Muscles

By William Ziegler

Manager of Stevedoring
Independent Pier Co.
Pier 34, South
Philadelphia, Pa.

modern handling methods on waterfront

pilferage is decreasing. Ships spend less time at docks. Stevedoring charges, per ton of cargoes handled, are low despite rising labor costs.

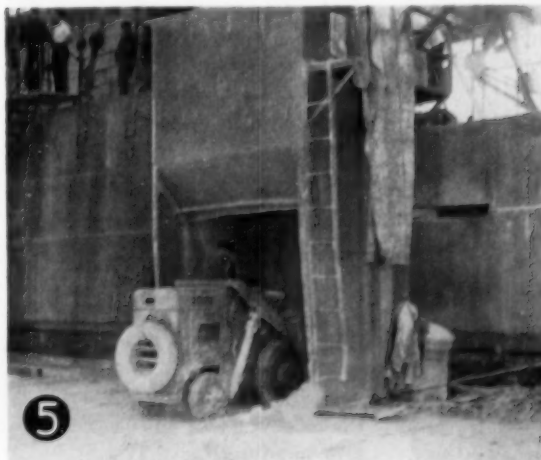
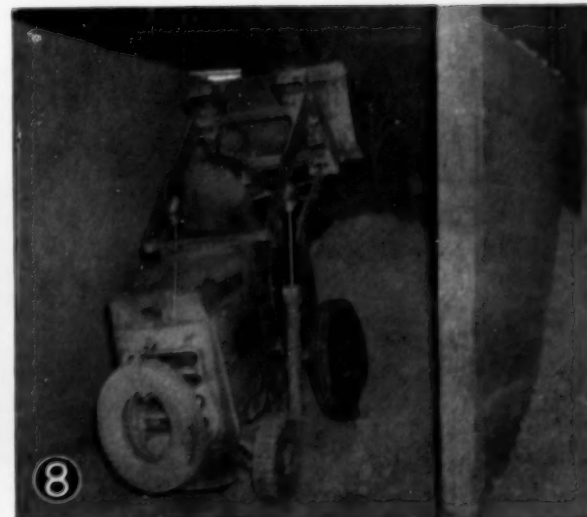
That is the bright picture, not only here in the Port of Philadelphia but, also, in many American ports. These advances have helped to keep water transportation not only in business but maintain its competitive status.

As an example of its strong competitive position, we need but look back about 10 years. For example, in 1945, the Port of Philadelphia handled 38,587 million tons of waterborne cargo. While, at this writing, the Army Engineers have not released the final figures for 1955, the records of Philadelphia's Department of Port Operations show a total well over 85 million tons.

While much credit for this increase unquestionably is due to the excellence of operation, improvement and maintenance of the basic port facilities, the part played by stevedoring must not be overlooked. Ships and shippers certainly

(Please Turn Page)

Handling china clay presents a problem. Fig. 5 shows special hopper into which clay is dropped by a tub from the ship's hold. Front-end loaders empty the hopper, as shown in Fig. 5, and load rail car, Fig. 6, or feed the conveyor, Fig. 7, or a storage bin, Fig. 8





Stevedores . . .

(Continued from Preceding Page)

would avoid this port if the quality of stevedoring was not good.

Now, to give an idea as to the progress made by stevedoring, we also need turn time back only 10 or 15 years. All unloading of ship cargoes was by means of the familiar, conventional slings operated from a ship's boom and rigging. Dock handling mostly was manual. While, here and there, a few pallets and lift trucks were seen, they were considered more of a curiosity and experiment.

Our references to mechanization of stevedoring in this port naturally include practically all of the 21 stevedoring organizations. Having been established since 1876, and being the oldest organization in Philadelphia and one of the oldest on the East Coast, we are familiar with all.

Perhaps the best idea of the extent of mechanization in stevedoring would be to describe very briefly the types of equipment used by the Independent Pier Co. Of necessity, this equipment will have to be divided into two categories: Standard, that available on the open market; Special, that of our own design.

In the standard group we have 34 lift trucks, known along the waterfront as chisels, for handling all kinds of palletized cargoes; 28 powered industrial trucks equipped with scoops for han-

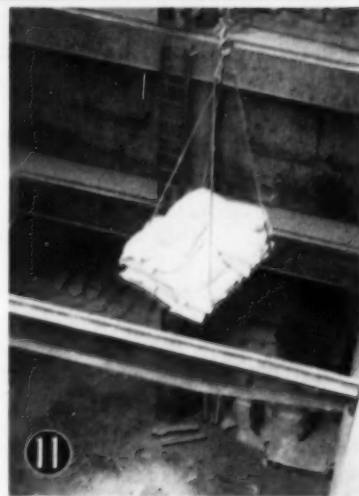
dling loose bulk cargoes; 16 industrial tow trucks, known here as jitneys, and about 100 industrial trailers; five mobile cranes, five magnets, in sizes up to 84 in., for handling steel scrap; three special conveyors with built-in scoops, which we call blowers; and about 10,000 pallets, used for loading cargoes in holds and in-transit storage on our piers.

Of course, we have a fleet of highway trucks for moving equipment and personnel.

As for the special equipment, most is in the form of hoppers, large and small, and such things as scrap chutes, of which we have 16.

With this equipment, we handle all kinds of general cargo, steel, grain, lumber, scrap metal, automobiles, dynamite, and such bulk cargoes as china clay. The equipment enables us to handle considerable tonnage—approximately 729,000 tons during 1955—with a moderate staff of personnel. We average 15 gangs of longshoremen the year around, with 22 men and one foreman comprising an average gang. Of course, there are many times, such as the past weekend, when we use as many as 36 gangs. In addition, we have an office staff of 30 people, and a maintenance crew of 20.

Our longshoremen, and their unions, are quite happy with the mechanized muscles with which we have provided them. They produce more; consequently, their wages are higher. They are less tired at the end of a working day,



Conventional slings still are needed, as for unloading bags of graphite at shipside, Fig. 9. But all other handling of bagged cargoes is by pallets, as seen on pier, Fig. 10, and Fig. 11

and they are more willing and able to work overtime when the need arises. Cargoes pass through their hands in better condition; therefore, there is less criticism, blame and fault finding.

We are all glad that stevedoring has adopted modern materials handling methods. Of course, the industry still has a long way to go. There still is a need for special equipment not used by general industry. In the meantime, we will contribute our long experience by building special devices—such as the special motor vehicle slings we just developed and put into use—so that cargoes entrusted to our hands will get the most efficient and least expensive handling.*

A NEW type boxcar, built with doorways 20 ft wide to facilitate carrying finished lumber in strapped unit loads, has been introduced by the Seaboard Air Line Railroad, Norfolk, Va.

The car recently completed its initial service run carrying some 25,000 board ft of 16-ft kiln-dried, dressed pine, packaged in units weighing from 3,300 to 7,260 lb.

Lift-Truck Operation

This shipment was stacked in position mechanically within the car in about 70 min, whereas an operation of this type normally would require from 16 to 18 man-hours.

Loading and unloading of the lumber is accomplished easily and quickly by the use of fork-lift trucks.

Car Design

The car actually is a rebuilt, standard-type, 50-ton boxcar, which has single sheathing and doors only 6 ft wide.

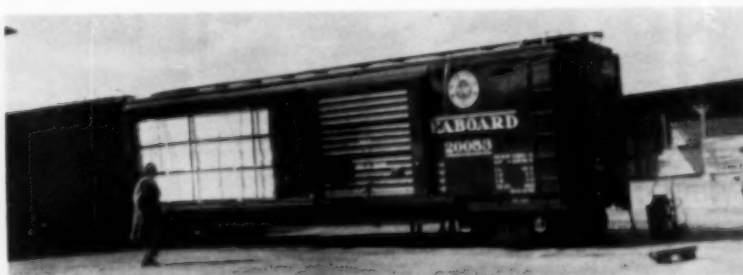
However, the wood sheathing was changed to wood lining and steel sheathing.

The boxcar, inside length of which is 40 ft, 6 in., has two 10-ft interlocking steel doors on each side, one pair located diagonally across from both doors on the opposite side of the car. The center door on each side of the car rolls back on its own track alongside the fixed side section. The end 10-ft doors on each side can be rolled back on a separate track, parallel to the center sections, thus providing the 20-ft openings.

Speed in Handling

The design feature permits the simultaneous opening of one door on each side of the car to allow for fork-lift truck operation. This free access to the car's interior greatly expedites handling.

Further study of the car design may indicate that the doors can be made as wide as 25 ft on each side, which, of course, would provide additional savings in time and costs.*



The end 10-ft doors on each side of the car can be rolled back on a separate track, parallel to the center sections, providing free access to car's interior

Rail Car Design Speeds Handling

Lumber in strapped loads can be stacked within the car in about 70 minutes, whereas this type handling operation normally would require 16 to 18 manhours

By George E. Toles

Loading and unloading the rebuilt, standard-type, 50-ton car is accomplished easily and quickly by the use of fork-lift trucks. The doorways are 20 ft wide





Fig. 1



Fig. 2

The Tote Container

as a Common Denominator

Figs. 3 (upper) & 4 (lower)



CONTAINERIZATION, in the past few years, has become one of the physical distribution industry's most effective weapons in the constant war on rising costs. Shippers and carriers in increasing numbers are discovering the tote container as an excellent means of moving bulk materials, and transporting mixed goods in less-pallet-load quantities.

Although they vary considerably in size and style, and by type of industry served, these containers all are pressed into service for the same basic reason—lower-cost shipment of non-palletized goods.

Containerization permits application of the unit-load principle to the movement of lpl and bulk materials. It thus narrows the distribution cost difference between such materials and those goods which lend themselves to palletization and other unit-load methods.

Advantages cited for containerization include:

1. Speedier handling and lower



Fig. 5

Tote containers permit application of the unit-load principle to those goods which do not lend themselves readily to palletization — providing faster service, lower transportation, warehousing, and handling costs

1. Adapted from a flat car, this basket car carries 24 wire containers
2. Container car carries 28 tote bins, is used for hauling bulk goods
3. Stevedoring costs are held to a minimum and service is speeded by use of all-steel tote boxes for overseas shipment of household goods
4. Boxes can be knocked down in 40 minutes for return transportation
5. Heavy-duty fork truck is used to load and unload Mobilvan boxes
6. Without the use of mechanical refrigeration, 6,000 lb of frozen foods made a successful 10-day voyage in this aluminum tote container
7. Pallet-like construction permits fork truck handling of tote bins
8. Material discharged from hopper cars into any standard type of conveyor system is fed into bins. Jolter sometimes is used in filling

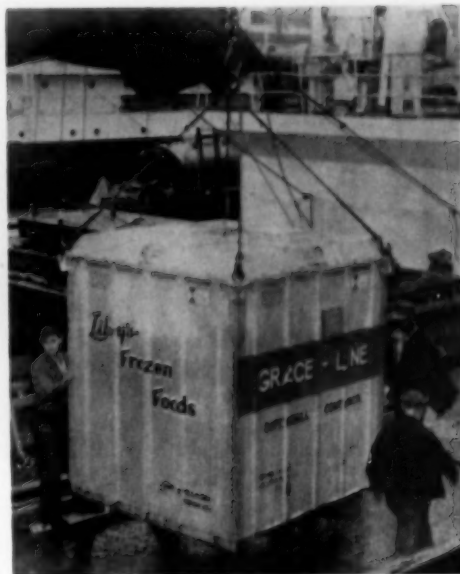


Fig. 6

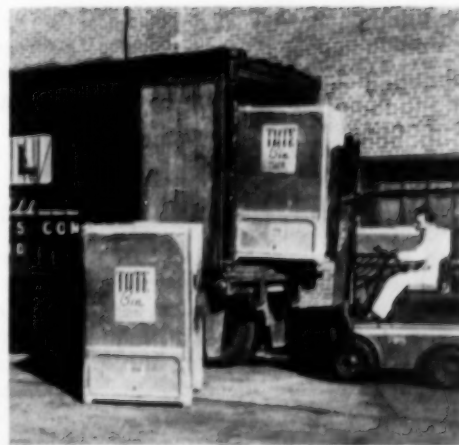


Fig. 7

handling costs through better utilization of modern handling equipment and fewer intermittent handlings.

2. Reduced transportation costs through lower tare weights and, in some instances, more attractive rates.

3. Fuller utilization of payload space in transportation vehicles, including over-the-road, rail, air, and water.

4. Lower warehousing and storage costs through better utilization of existing storage space in
(Please Turn Page)

Fig. 8





Fig. 9



Fig. 10

The Tote Container . . .

(Continued from Preceding Page)

warehouses, on shipping and receiving docks, and in temporary storage sections in production areas.

5. Reduction in loss and damage ratios through better protection of goods, less exposure to pilferage, and reduction of the possibility of loss through small, scattered shipments.

6. Speedier paperwork processing through the consolidation of orders.

7. Lower packaging costs, with the container often obviating the necessity for expensive protective packaging for individual items.

8. Flexibility in distribution through use of those containers which are sealed and weather-proof for outdoor storage.

Tote containers are constructed from a wide variety of materials, including wood, all types of metals, fibre, cloth, plastics, and composition. Types of construction are even more numerous than types of materials, ranging from the huge metal boxes used in modified piggy-back operations, to standard units used for small parts shipment, foods, etc.

The greatest diversification, however, is found in the number of different applications shippers and carriers are finding for the tote containers. In addition to

the traditional bulk materials, such as grains, sugar, flour, etc., the containers today are being successfully used to ship such unlikely materials as household goods, frozen foods, etc.

Container Vehicles

The latest innovation in containerization is found in the carrier field. Transportation agencies are building new vehicles or modifying standard vehicles for the movement of containers.

The piggy-back system itself, in which loaded highway trailers are carried on board ship or on railroad flat cars, actually is a large scale application of containerization.

From this basic principle the carriers are adapting equipment to become, in effect, container-cars, container-trailers, container-ships, and even container-aircraft.

The Nickel Plate Railroad has developed a "basket car" for the transportation of forgings for the automotive industry. The car carries 24 wire containers which are loaded and unloaded by fork trucks from ground level. Forgings are loaded in the containers at the plant, and remain in containers on delivery to the automobile producer.

A center partition extending the

9. Bins designed for easy tying are credited with 30 to 50% space saving

10. Bins are locked in place on car bed, car can be unloaded in 30 min

11. Discharging one, two, or multiple number of bins at once by tilter

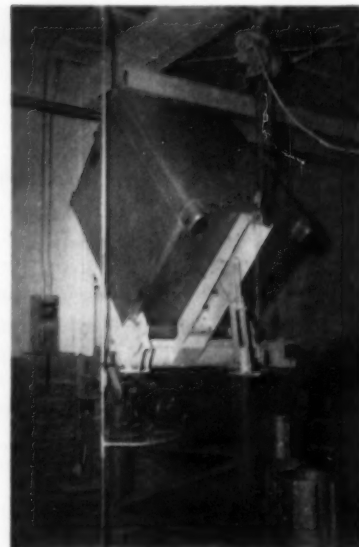
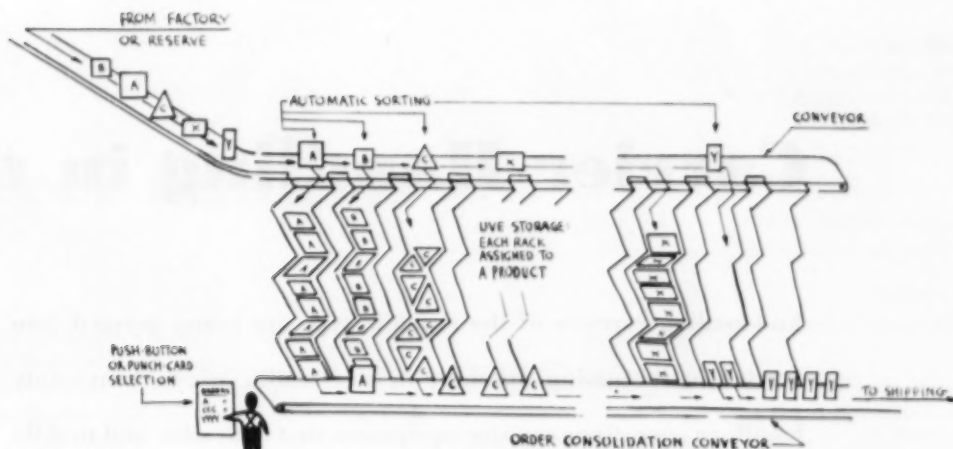


Fig. 11

length of the car forms eight compartments, each of which holds three baskets. Baskets weigh about 200 lb each and, when loaded, 5,000 lb. Heavy canvas tarpaulins prevent forgings from jumping out of baskets in transit.

Shippers' Car Line Corp. has developed a container car designed to carry 28 tote bins for transportation of bulk materials; and ACF Industries, Inc., recently introduced (Please Turn to Page 77)



From the factory or reserve area, goods are conveyed to a series of live storage racks, where they are sorted automatically by brand, size, color, etc. To pick an order, instructions are

fed into a DASAC control unit, which directs the automatic discharge of the correct number of each unit. These selections are consolidated on conveyor and sent to shipping department

Less-Pallet-Load Handling

DESPITE the general acceptance of palletization and the unit load, a number of industrial operations still rely on manual handling in areas requiring the selection, storage, and shipment of goods in less-pallet-load quantities.

The Problem

Studies indicate that the cost of picking and handling less than full pallet loads of one item, or of collecting mixed pallet loads, may be five or more times the cost of handling full pallet loads. This problem is particularly acute for manufacturers and distributors of food, drug and tobacco lines, automotive items, and many others.

Typically, a customer may order 50 cases of a given item. The standard pallet load calls for 44 cases. The six cases must be picked manually. The cost of handling the six cases may be several times the cost of handling the full pallet load. When an order calls for 10 separate items in small quantities, the picker must go to each of the holding areas and withdraw cases manually, and

The problem of warehousing and shipping goods in lpl quantities is being solved by the use of modern control equipment

By Allan Harvey

Dasol Corporation, New York, N. Y.

place them individually on a pallet.

As compared to moving one full pallet load, he has lost the time involved in traveling to the separate holding areas, and the time required to select, lift, move and place the unit on a truck. Additionally, if merchandise must be picked one case at a time, such merchandise usually cannot be stacked more than one pallet load high.

The Solution

The answer lies in some form of automatic pick-out of the less-than-pallet-load quantities.

With modern control equipment it is possible for one operator, located in an office if desired, to

select any goods needed to fill an order, automatically discharge such goods onto conveyors, consolidate orders and place them at the shipping platform ready for delivery separately or in combination with full pallet orders.

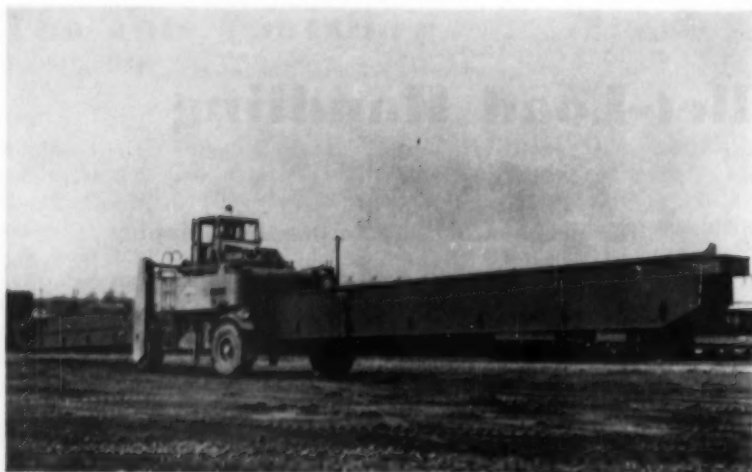
If non-palletized shipping is used, such orders can be fed directly into trucks, or labor can be employed to palletize mixed shipments in a continuous operation in the shipping area. The labor cost of handling lpl quantities could thereby be reduced to the cost, or even below the cost, of handling full pallet loads.

This concept for handling lpl quantities derives from the re-

(Please Turn to Page 98)

Carrier Handling in the

End-loading carriers of the straddle type are being pressed into service in increasing numbers in steel mills, where heavy-duty handling operations require equipment that is flexible and mobile



A typical steel mill materials handling task is performed by this carrier, which is shown hauling a 92-ft long crane girder weighing more than 22,000 lb

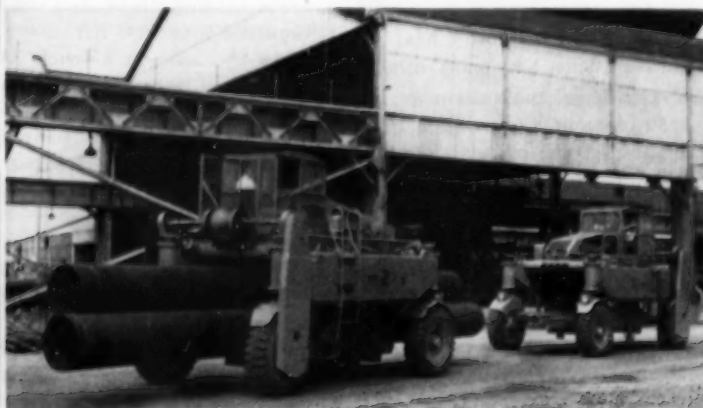
THERE are many variations in steel mill practice, depending upon equipment, product, etc. However, major operations generally occur in the following sequence:

Charging furnace, melting and pouring metal, stripping and soaking ingot, rolling ingot into bloom or billet, removing surface defects by conditioning, rerolling, finishing, inspection and shipping.

The flow of material during this process fluctuates from one operation to the next. Therefore, it is necessary to handle and store a large volume of material between these operations. A 15-day inventory ahead of a mill is not uncommon.



Left: Bolsters permit carriers to adapt quickly to all types of loads, such as these three coils



Below: Pair of carriers handling pipes and billets. Carrier handling costs in mills are computed at .0953¢ per ton

Steel Industry

Some problems created by this flow pattern are as follows:

1. Equipment must be quickly adaptable for handling various types of material.

2. The system must be flexible, since each heat of steel in process must retain its own individual metallurgical identity through the process. The storage system must allow complete selectivity.

3. The equipment must be highly mobile. Operations may be from 75 ft to over a mile apart.

4. The system must be economical to operate and maintain.

Handling Methods

Some steel mills have solved this four-part problem through the use of end-loading (straddle type) carriers.

Basically, the carrier method of handling involves the use of a rubber-tired straddle truck which drives over and straddles the load of steel to be moved. The steel is moved and stored on low-cost wooden or steel members known as bolsters.

In the storage areas (known as lay-down areas), the loads are not

stacked one on top of another. Instead, the bolsters are lined up at a 45-deg angle along both sides on the aisle.

Any load requested by the mill can be picked up with a carrier and sent on its way in less than 10 seconds.

Handling by Rail

Prior to the use of carriers, the most accepted method of handling in-process steel was with gondola-type railroad cars and switch engines. In this operation, the cars were loaded by a crane. They then were switched out into the yard for storage. When the steel was needed at the next operation, the cars in the yard were reshuffled and the particular car desired was switched back into the mill. The limitations of this method are apparent.

Handling Costs

To demonstrate the economics of carrier handling, it is first necessary to determine the operating cost per hour and tons of steel handled per hour with this type of equipment.

An average three-year-old, 20- to

By Carl Knapp
Application Engineer
Clark Equipment Co., Ross Carrier Div.
Benton Harbor, Mich.

25-ton carrier costs about \$6.10 per hour to operate in a steel mill.

Table I
Carrier Operating Costs

	Rate per hr
Driver's wages	\$2.75
Maintenance	1.10
Fuel and Lubes	.40
Tires	.40
Miscellaneous	.20
Insurance	.02
Bolster charges	.23
Carrier depreciation	
4 years at 500 running hours/month, 3 1/2 per cent interest on \$21,500 investment, \$500 value after four years	1.00
Total cost per hour	\$4.10

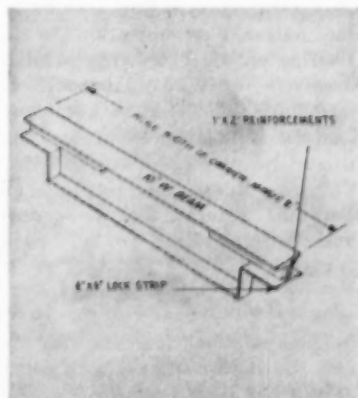
Tons per Hour

The tons of steel handled per hour with a carrier varies from mill to mill. It depends upon the load size and density, distances traveled, and dispatching control. When the yards are adequate and conveniently located, a carrier may average 75 tons per hr. In special cases, where heavy loads are handled continuously over short distances, one carrier can handle hundreds of tons per hour.

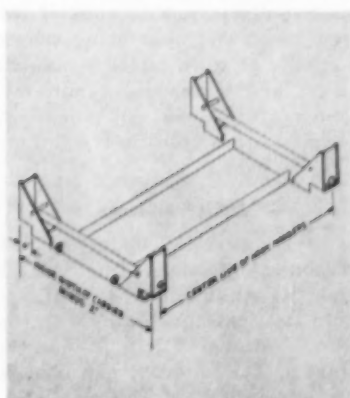
Sixty-four tons per hour is used as an average operating condition. This is an over-all average based on performances recorded in several different mills handling bars, billets and tubes. This figure assumes that the carrier, in addition to handling 64 tons of steel per

(Please Turn to Page 96)

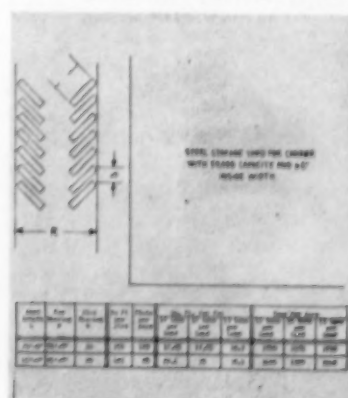
Two-piece type bolster is less expensive, lighter, and more maneuverable



One-piece type bolster has vertical posts which are used to retain loads



Steel storage yard for carrier with 50,000-lb capacity, and 62-in inside width





E. Albert Owens
*Academy of Advanced
Traffic*



Fred V. Gardner
*Fred V. Gardner
Associates*



George G. Raymond
*The Raymond
Corporation*



Grover Barkdoll
*Methods Engineering
Council*



James R. Bright
*Harvard University
School of Bus. Adm.*

Integration in the Spotlight at

More than 26,000 visitors jam Cleveland's Public Auditorium to view materials

"INTEGRATED Handling—Management Profit Tool," served as the theme at last month's Material Handling Institute's Exposition of 1956. Some 26,000 visitors jammed Cleveland's Public Auditorium to view approximately 2,000 pieces of materials handling equipment displayed by 160 firms.

Herbert S. Jones
New AMHS President



The Integrated Handling slogan served as the official theme for the American Material Handling Society's Technical Sessions, conducted in conjunction with the Exposition.

Integration was the unofficial theme of the show itself, as a majority of the exhibitors displayed their equipment as integral parts of over-all handling systems.

On-the-Job Atmosphere

Emphasis at the Exposition was on live displays, with most of the equipment and tools being shown actually at work under simulated plant and warehouse conditions. Much of the new equipment on display is described in the following six pages.

AMHS Officers

In addition to conducting the Technical Sessions, the AMHS held its Annual Board of Directors Meeting, culminating with the First National AMHS Dinner, on June 6. The following new officers were installed at the dinner:

Herbert S. Jones, Dominion Bridge Co., Montreal, Quebec, president; Frank G. Latour, Mohawk Carpet Mills, first vice president; William E. Kappler, North American Aviation, Inc., second vice president; Alfred J. Van Benschoten, Raybestos Manhattan, Inc., treasurer, and Lynn J. Riege, United States Gypsum Co., secretary.

Citations Awarded

Citations were awarded at the dinner for outstanding service to the national organization to J. Wellington Hall, retiring AMHS president, of Westinghouse Electric Corp.; J. Francis Carle, of Lincoln Extension Institute; Mr. Riege; Norman L. Shikes, of RCA, Camden; Russell A. Howlett, of Toronto, Ontario, and Congressman Edwin Rodino, of New Jersey.

Technical Sessions

The Technical Sessions were divided into 12 sections, with some of the nation's leading materials



H. B. Maynard
Methods Engineering
Council



Andrew J. Briggs
Navy Bureau of
Supplies & Accounts



Joseph W. Shimp
Marinette Paper
Company

MHI Exposition

handling equipment tools, and systems in action

handling experts speaking on all phases of the industry.

E. Albert Ovens, vice president of the Academy of Advanced Traffic, spoke on "Traffic Management and Materials Handling." Lamenting the present lack of coordination between the two fields, Ovens said, "Traffic management and materials handling are blood brothers, not distant cousins."

"The smooth flow of materials requires cooperative and coordinated efforts on the part of both groups. There is no branch of industry today, and certainly will not be in the immediate future, where the return is as great for each dollar of capital investment as in the fields of traffic management and materials handling."

Distribution and Handling

"Distribution in Relationship to Materials Handling" was the subject of an address by Wilbur D. Warner, materials handling manager of Sears, Roebuck & Co. He said, "Receiving, shipping and warehousing are no longer neces-

sary evils, but rather an essential part of business.

"Materials handling plays a vital role in transportation, storage, service, communications, and systems. The handling engineer's scope of responsibility has been extended to include a thorough knowledge of equipment, methods, manufacturing, ordering, handling procedures, cost accounting, construction, transportation, distribution, and organization."

Warehousing

"Four major considerations for warehouse layout—similarity, popularity, size, and characteristics of items—are the key to stock positioning and space control," according to Andrew J. Briggs, head of the Materials Handling and Warehouse Branch of the U. S. Navy Bureau of Supplies and Accounts.

Briggs spoke on "A Simplified Approach to Stock Positioning and Space Control." He said, "Of the four considerations, popularity, or speed of issue, is ranked first in

importance. Approximately 90 per cent of the work is accomplished in 15 per cent of the items."

Management and Handling

George G. Raymond, Jr., of the Raymond Corp., and president of MHI, said, "Don't sell me equipment, layouts, and methods—sell me return on investment." He spoke on "Top Management and Materials Handling."

Another management phase, "Paper Mill Management Looks at Materials Handling," was explored by Joseph W. Shimp, of the Marinette Paper Co. He explained, "The handling specialist must broaden his framework of effectiveness beyond the pallet, the conveyor, and the truck. It must include not only mass movement of large loads of goods, but also materials in process, methods improvement, and work simplification."

"Managerial Problems Arising Out of Automation" was covered by James R. Bright, of Harvard University. He reported on significant findings from 15 months of research in 12 firms on advantages, disadvantages, problems, etc., of automation.

Plant Layout

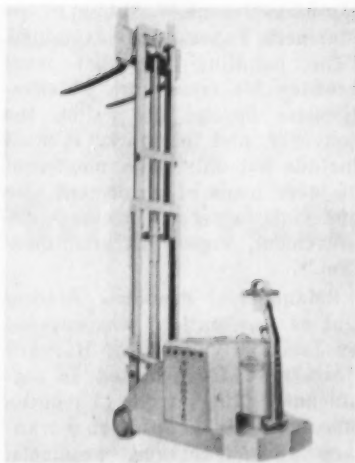
Other speakers included James Apple, of Michigan State University, who spoke on "Relationship of Plant Layout to Materials Handling." Alan H. Mogenson, of Work Simplification Conference, spoke on "Work Simplification and Its Use in Materials Handling."

"Analyzing Materials Handling Costs" was the subject of an address by Fred V. Gardner, of Fred V. Gardner Associates. He was followed by Grover Barkdoll, of the Methods Engineering Council, speaking on "Operation Analysis in Materials Handling."

H. B. Maynard, also of the Methods Engineering Council, explored the value of methods-time measurement in a paper entitled "Work Measurement and Materials Handling." The program was brought to a close by Dr. Lillian Gilbreth, Knapp visiting professor, who discussed management's responsibilities in education and training.*

Materials Handling Equipment

Post-Show Round-Up



Automatic Transportation Co.

The Transporter stacker, a high-lift, suspended-load type, is one of the new line of operator-led, electric-driven industrial trucks. The stackers, built with load capacities ranging from 2, to 4,000 lb, have an overall height of 83 in. and a telescopic lift of 135 in.

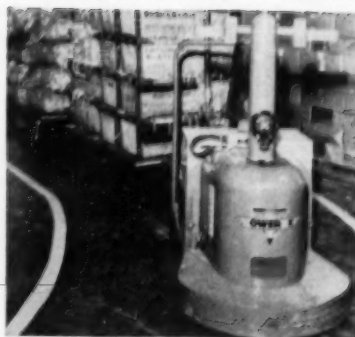
Circle 93 on Card Facing Page 69



The Stanley Works

The electric skid magazine tool, Model ESM, features automatic seal feed, uniform and automatic tightening, selective tension adjustment with unlimited strap take-up, an easy-to-load magazine that takes a clip of 80 seals, and easy hand-lever operation

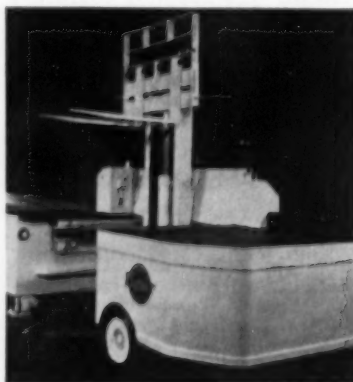
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Barrett-Cravens Co.

This electronic industrial tractor requires no operator. A guide wire beneath the surface of the floor emits an electronic signal which is sensed by the guidance receiver on the tractor—guiding it left or right and controlling starting and stopping. Working in an undeviating path, this Guide-O-Matic can pull up to 6,000 lb of freight

Circle 95 on Card Facing Page 69



Baker-Raulang Co.

This new, 4,000-lb capacity, fork-lift truck, Model TE-4, can carry and stack in aisles as narrow as six ft, and utilizes the side-loading principle. The battery-powered truck is of the standup rider type and can be used with standard or master pallets and other long loads such as pipe, bar stock, lumber, etc.

Circle 96 on Card Facing Page 69



The Dexion Div., Acme Steel Co.

Shown are pallet racks made of Slotted Angle—a multi-purpose metal framing material used in building shelving, bins, racks, framework for belt and roller conveyor lines, etc. These structures are claimed to provide more storage or work areas within present space limitations

Circle 97 on Card Facing Page 69

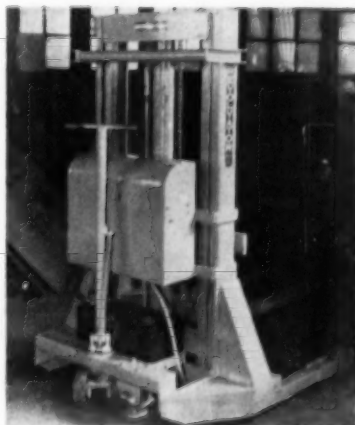


Nutting Truck and Caster Co.

The hub of this new type caster swings while going over rough surfaces and obstructions to keep trucks, trailers and loads on a straight, even line. Made in matching rigid and swivel types with 8-, 10-, 12-, and 16-in. diameter wheels. Steel wheels also are available

Circle 98 on Card Facing Page 69

Four pages of pictures and descriptions of all types materials handling tools, machinery, and systems displayed last month at the Material Handling Institute's Exposition, in Cleveland



Revolver Co.

The model TPT, portable hydraulic fork lift is specifically designed for conversion to a walk-along truck when usage increases. The unit is moved manually from place to place, but is powered for lifting with the same 12-volt pump, hydraulic ram and roller chains used on the walk-along truck model

Circle 99 on Card Facing Page 69



Mercury Mfg. Co.

Full spring suspension, and design for rear seated operation are the main features of the new electric tractor, Model A-751. Other design features include automotive wheel-type steering; unit-assembled double reduction drive; self-energizing, hydraulic brakes; 4-speed magnetic controller and demountable wheel rim and tire assemblies

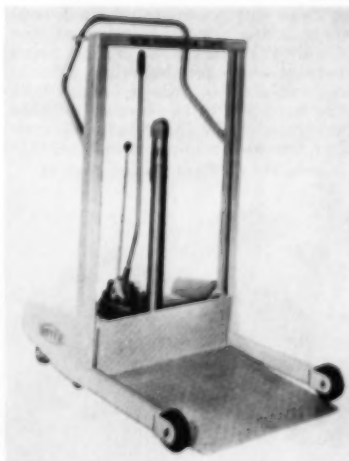
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Globe Hoist Co.

This Trans-O-Matic ramp installation requires no ground excavation, and is easily attached to any dock. Ramp rides with truck bed level during loading or unloading operations, and automatic safety switch prevents sudden dipping action if truck should pull out from under the ramp lip

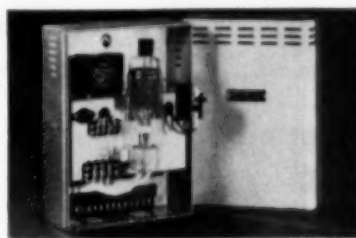
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The Oster Mfg. Co.

Specifications on this hand-operated, portable hydraulic lift are: capacity, 500 lb at a 12-in. load center; lift height, minimum to maximum, 0 to 42 in.; turning radius, 50 in.; overall height, 54 in.; overall length, 43 1/4 in.; weight, 254 lb; steel platform 24 x 24 in.

Circle 102 on Card Facing Page 69



General Electric Co.

This packaged half-wave Thy-mo-trol conveyor drive is one of the new products recently developed by the company. A completely new line of direct-current motors and generators, designed for versatility of application and performance, also has been announced

Circle 103 on Card Facing Page 69



Buda Div.,

Allis-Chalmers Mfg. Co.

A series of special, diesel-powered, non-electric, fork-lift trucks, in 3-, to 10,000-lb capacities has been developed, and can be operated with complete safety in explosive and dangerous areas. The trucks, available with static-conductive tires and non-sparking metal forks, have no electrical or ignition system

Circle 104 on Card Facing Page 69



G. B. Lewis Co.

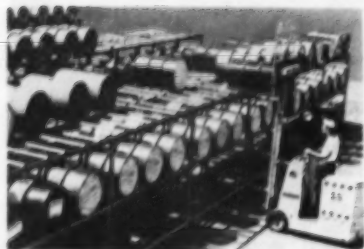
Included in the complete line of containers, skid and stacking boxes, and box trucks, is a new tote pan molded in one piece of fiberglass reinforced polyester. This pan cannot shatter, dent, bend, rust, rot, or corrode. It is light-weight, resists oil, water and most chemicals, and can be exposed to a wide range of temperatures

Circle 105 on Card Facing Page 69

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Post-Show Round-Up . . .

(Continued from Preceding Page)



Artco Corp.

This new addition to the rack line features two all-welded assemblies which are readily bolted into place allowing for the ease of erection and immediate accessibility of all drums in storage. Common end frames are featured in each section so that the racks may be placed in a continuous string

Circle 106 on Card Facing Page 69



Weber Marking Systems Div., Weber Addressing Machine Co.

The system consists of a ship-to label frame printed on the cartons at the time they are manufactured. The ship-to address is imprinted within the label frames with a small handprinter and a paper stencil which has been prepared on a typewriter. The label frame easily can be blocked out for rehandling by the consignee

Circle 107 on Card Facing Page 69



Magline, Inc.

For use on truck docks only, a new line of light-weight, magnesium alloy dock plates has been introduced by the company. Nine standard sizes are available, from 36 to 72 in. wide, and from 24 to 48 in. long. Load ratings are from 1,800 to 4,800 lb axle load

Circle 108 on Card Facing Page 69



Magnesium Co. of America

The portable, magnesium yard ramp is claimed to speed ground-level loading and eliminate double handling. One man can wheel it around and position it without aid of powered equipment. The ramp is available in a variety of sizes with capacities from 6,000 to 16,000 lb, and lengths of 30 or 36 ft, or special if desired

Circle 109 on Card Facing Page 69



Ingersoll Kalamazoo Div., Borg-Warner Corp.

The Load Luger mounted truck consists of a flat-bed truck body and two hydraulically operated lifting arms generally used for handling detachable containers, whose capacities range from 1½ to 14 yds, and weights ranging to 18,000 lb. Detachable container line also was exhibited recently

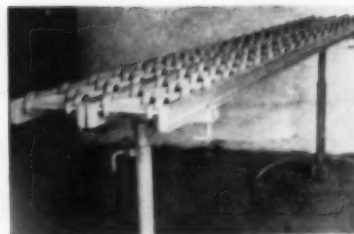
Circle 110 on Card Facing Page 69



Towmotor Corp.

Maximum speed and efficiency in the handling of all types of open-center loads is claimed by employing the combined utility provided by two lift-truck attachments—the unloader and the ram attachment—available as optional equipment on this company's fork-lift trucks. The ram is interchangeable with standard forks

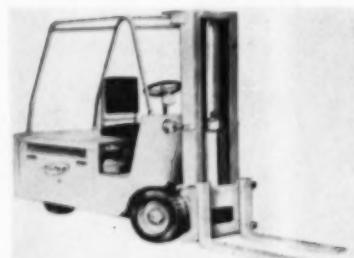
Circle 111 on Card Facing Page 69



Market Forge Co.

This new 7-in. wide Load-Veyor skate-wheel conveyor is made specifically in narrow widths to make it light and easily portable, and also allow it to be assembled in multiples

Circle 112 on Card Facing Page 69



The Elwell-Parker Electric Co.

Principal feature of the new, Safe-Hite series of fork trucks—with capacities of 2, 3, and 4,000 lb—is the reduction in the height of the battery compartment, so that the operator, whose seat is on this compartment, sits 18 in. lower than on conventional models

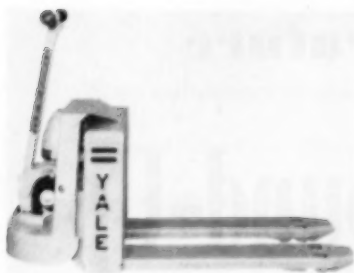
Circle 113 on Card Facing Page 69



Storage Battery Div., Thomas A. Edison, Inc.

The 25-watt, seal-beam floodlights of this new emergency lighting unit, switch on automatically in case of power failure, and off again when the regular source of power is restored. The unit is wired into a standard 115-volt AC line, and the battery is kept fully charged by means of a built-in trickle charger

Circle 114 on Card Facing Page 69



The Yale & Towne Mfg. Co.

Available in 4-, and 6,000-lb capacities, the new Worksaver pallet truck can be fitted with two different size battery compartments. The new break-away feature incorporated into the pallet truck makes maintenance as simple as the operation of the unit. New models have two speeds forward and two reverse

Circle 115 on Card Facing Page 69



Faultless Caster Corp.

Triple grease-sealed casters, Series 900GS, are designed to substantially reduce maintenance where casters are exposed to water, chemicals, or dirt. The caster line features positive seals around all bearing areas. Floor truck locks also are featured by this manufacturer

Circle 118 on Card Facing Page 69



Hyster Co.

This series of 3-, 4-, and 5,000-lb capacity, gasoline-powered, lift truck models on pneumatic tires, reflect current automotive trends typified by compact, close-to-the-ground silhouette, increased safety, automobile-like controls, greater operator comfort and faster speed of operation

Circle 121 on Card Facing Page 69



Electronics and Instrumentation Div., Baldwin-Lima-Hamilton Corp.

Available in all standard truck capacities, the fork-lift truck weighing system, which incorporates the SR-4 load cell, is used for the measurement of loads and forces throughout industry. Easily installed, the 6 volts required to power the instrument can be obtained from the truck battery

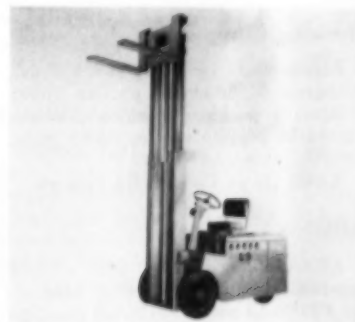
Circle 116 on Card Facing Page 69



Mechanical Handling Systems, Inc.

An IVC (Infinitely Variable Control) Drive unit, shown above; a push-and-carry system, consisting of light-weight overhead trolley conveyors, carriers, etc.; and an MHS Overlimitor, are included in the complete line of handling equipment recently exhibited by the company

Circle 119 on Card Facing Page 69



Lewis-Shepard Products, Inc.

The new Power Master line of electric fork trucks (Model RR), in capacities to 7,000 lb, features a new rear wheel gear drive powered by two compound wound traction motors with an electric differential, and a high pressure (2,800 psi) hydraulic system. Lifting speed with 7,000-lb loads is 25 fpm, and empty 30 fpm

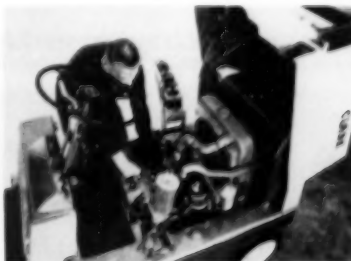
Circle 122 on Card Facing Page 69



Lamson Mobilift Corp.

This new, 2,000-lb, sit-down industrial truck, Model B-224, and its latest safety attachment, an overload warning signal, recently was introduced. It is claimed to be the only 2,000-lb, 24-in. load center, capacity truck with automatic transmission as standard equipment

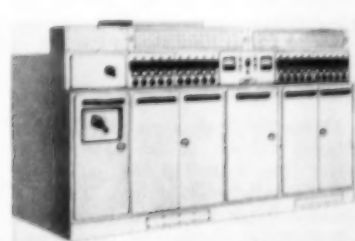
Circle 117 on Card Facing Page 69



Clark Equipment Co.

An engine compartment which is completely exposed by raising a balanced, one-piece hood, is a feature of the new Clarklift line of fork trucks recently introduced. Quick access to the engine compartment facilitates maintenance operations on the five-model truck line

Circle 120 on Card Facing Page 69



The Electric Products Co.

This new battery charger, called the Unepac, is a completely enclosed factory-assembled unit, and is self-supporting and rigid enough to be moved without disassembling. Shipped and installed as a unit, only two simple connections will be needed for installation. The charger may be equipped for automatic paralleling

Circle 123 on Card Facing Page 69

Handling Equipment Literature

Post-Show Round-Up

Wooden Pallets

Acme Pallet Co. has made available Catalog-Handbook No. 156, describing the firm's regular pallets and the Zeferwate Shipping pallets.

Circle 124 on Card Facing Page 69

Marking Equipment

Algene Marking Equipment Co. has prepared a brochure on its roller printer, a package marking tool designed to replace labels, stamp pads, stencils, decals, etc.

Circle 125 on Card Facing Page 69

3,000-lb Fork Truck

Allis-Chalmers, Buda Div., offered specifications and operating data on its FTP30-24 and FTPD30-24 gasoline and diesel powered fork-lift trucks. The trucks are rated at 3000-lb load capacity at 24-in. load center.

Circle 126 on Card Facing Page 69

Paper Pallets

American Cyanamid Co. has announced a bulletin on its Accopak paper pallets. The pallet consists of a kraft paper sling and two spiral-wound paper tubes. The tubes are inserted into preformed sleeves for fork entry.

Circle 127 on Card Facing Page 69

Pallet Trucks

Automatic Transportation Co. distributed folders on its new Transporter line, including the pallet line and the pallet-stacker line. The new trucks feature simplified lubrication, a new pallet check, and three-speed butterfly control.

Circle 128 on Card Facing Page 69

Tensional Strapping

Brainard Steel Div., Sharon Steel Corp., has offered a bulletin on strapping tools for tensional strapping. Described are coil holders, sealers, reels, trays, snips, and stretchers.

Circle 129 on Card Facing Page 69

Adjustable Ramps

Rowe Methods, Inc., has prepared a bulletin describing its adjustable ramps for loading docks. Outlined are specifications on the Adjust-A-Dock and Adjust-A-Truck. The first unit is for dock installation, the second designed to be set into the pavement in front of the dock.

Circle 130 on Card Facing Page 69

Truck Accessories

Towmotor Corp. is offering a folder on its standard accessories for fork trucks. It describes crane arms, scoops, side shifters, back rests, fork extensions, upenders, grippers, guards, rams, clamps, etc.

Circle 131 on Card Facing Page 69

Magnesium Dockboards

Magnesium Co. of America lists six reasons for the efficiency of its line of light-weight, heavy-duty magnesium dockboards. Rounded curb-ends, quarter-round safety curbs, one-piece hand-holds, engineered crown, rounded-edge beveling, and heavy-duty construction are mentioned.

Circle 132 on Card Facing Page 69

Operatorless Tractor

Barrett-Cravens Co. has prepared literature on its Guide-O-Matic operatorless tractor. This new tractor-trailer system is trackless, and operates with no permanent chain in floor or overhead conveyor installation.

Circle 133 on Card Facing Page 69

Printer-Addresser

Weber Label and Marking Systems has announced a new bulletin on the KC-E label printing and addressing machine. The machine prints, addresses or marks, counts, and cuts to size shipping and product identification labels.

Circle 134 on Card Facing Page 69

Walkie and Rider Trucks

Moto-Truc Co. has issued a condensed catalog on its complete line powered walkie and small rider type industrial trucks. Included are low-lift pallet and platform trucks, outrigger type high-lift trucks, counter-balanced fork trucks, and a variety of tractors.

Circle 135 on Card Facing Page 69

Cutting the ribbon to open the Material Handling Institute's Exposition are R. L. Fairbank (left) Show Committee chairman, and George Raymond, MHI president



Most exhibitors at the MHI show last month offered product literature. You are invited to use the Reader Service Card in this issue to obtain the free literature of your choice

Mechanical Ramps

Loomis Machine Co. describes its three standard recessed and three flush-type recessed automatic loading ramps in a new pamphlet. The Rite-Hite ramps have no mechanisms or controls, piping, wiring, pumps, gears, etc.

Circle 136 on Card Facing Page 69

Truck Improvements

Lewis-Shepherd Products' exposition edition of the Lever describes all of its new industrial truck equipment. Included are the new Model E Spacemaster, handle-head controls for walkies, a new heavy-duty fork truck line, the electro-hydraulic battery powered stackers, and new hydraulic jacklift.

Circle 137 on Card Facing Page 69

Casters and Trucks

Colson Corp. has published a 32-page booklet on its complete line of casters and materials handling trucks. In addition to casters, it describes hand trucks, shelf trucks, dollies, skid jacks, tote trucks, etc.

Circle 138 on Card Facing Page 69

One of the many booths at the show where visitors were invited to sit down and view the equipment in actual operation. The emphasis was on live displays



Materials Movement

Lamson Corp. has prepared an indexed brochure on its line of materials handling equipment. Described are airtube systems, vertical conveyors, trayveyors, conveying systems, automatic pallet loaders, and industrial trucks.

Circle 139 on Card Facing Page 69

Side-Loading Truck

Baker-Raulang Co. has issued a pamphlet on the new electric-drive TE-4 Traveloader, a 4,000-lb capacity side-loading fork truck that can operate in 6-ft aisles.

Circle 140 on Card Facing Page 69

Metal Pallets and Skids

Union Metal Mfg. Co. describes its line of metal pallets, skids, and boxes for a variety of materials handling applications.

Circle 141 on Card Facing Page 69

Fork Truck Scale

Baldwin-Lima-Hamilton Corp. has prepared a specifications sheet on the Baldwin fork truck weighing system.

The system incorporates the SR-4 load cell.

Circle 142 on Card Facing Page 69

LP-Gas Driven Trucks

Clark Equipment Co. is offering a pamphlet on liquefied petroleum gas power for its line of fork trucks. Specifications on the fuel system and advantages of LP Gas are outlined.

Circle 143 on Card Facing Page 69

Powered Industrial Trucks

Elwell-Parker Electric Co. has prepared a condensed catalog on its complete line of powered industrial trucks.

Circle 144 on Card Facing Page 69

Industrial Truck Batteries

Exide Industrial Div., Exide Storage Battery Co., lists the six principal features of its Ironclad batteries for use in industrial trucks in a new eight-page folder.

Circle 145 on Card Facing Page 69

Mobile Loading Ramp

Magline, Inc., claims in a new brochure that its magnesium mobile loading ramps cut yard loading time of rail cars in half. The ramps are offered in eight models, ranging in capacity from 5,000 to 13,000 lb.

Circle 146 on Card Facing Page 69

4,000-lb Capacity Truck

Mercury Manufacturing Co. has published literature on its Yak 430, a two-wheel drive and steer, sit-down type, electric powered fork truck. The 4,000-lb capacity truck offers increased fork elevation with greater free lift.

Circle 147 on Card Facing Page 69

Pneumatic-Tired Trucks

Hyster Co. has published a pamphlet describing its four new pneumatic-tired industrial trucks. Included are the 3,000-, 4,000-, and 5,000-lb fork trucks and the new 10,000-lb capacity truck crane.

Circle 148 on Card Facing Page 69

Automatic Dockboards

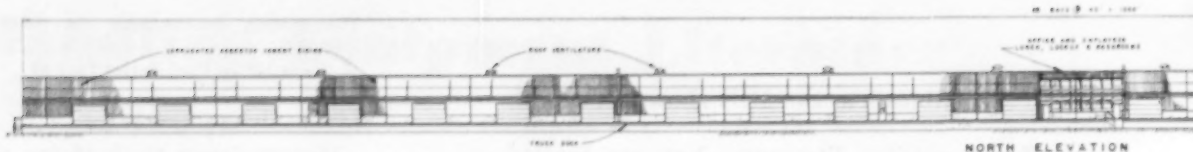
Kelley Co. has issued a four-page bulletin and separate specifications sheet on the Hi-Lo automatic dockboards.

Circle 149 on Card Facing Page 69

Elevating Endgates

Gar Wood Industries, Inc., has published a new brochure on its Frate-Gate, a 2,000-lb capacity elevating endgate.

Circle 150 on Card Facing Page 69



Chicago's Bid for Port

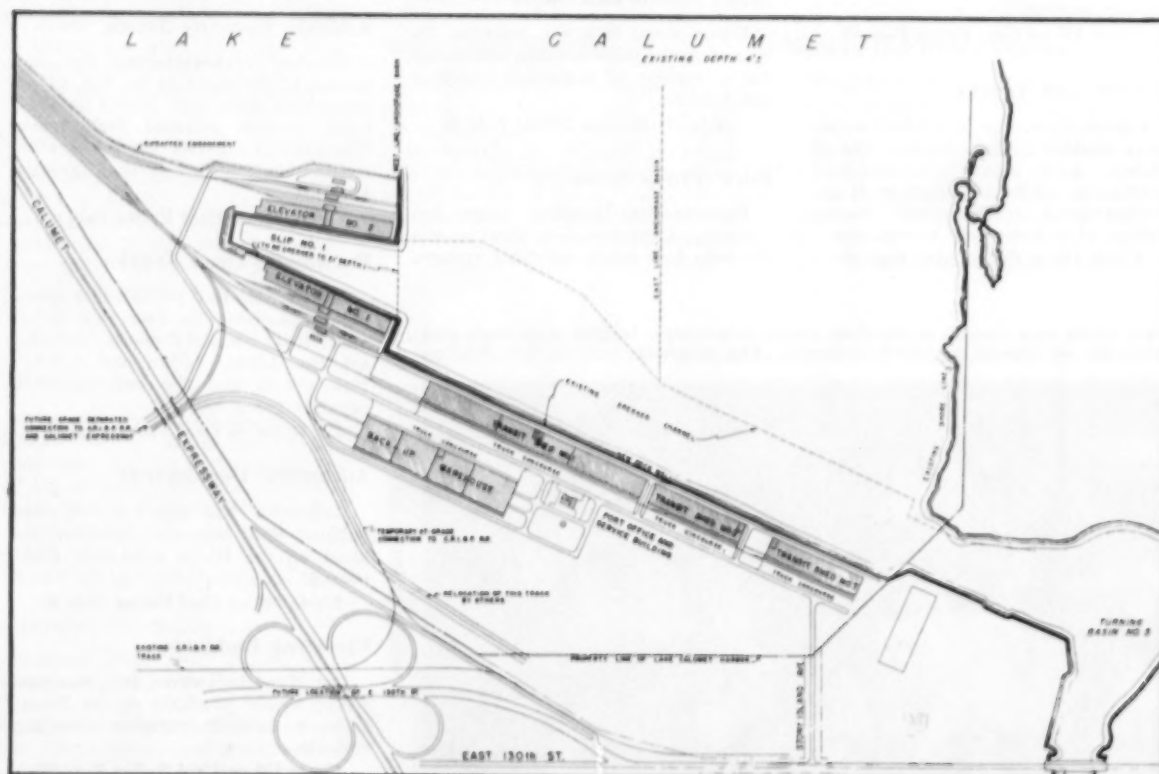
Deepening and widening of the 16.2-mile Cal-Sag Channel and construction of new port facilities in the area, in connection with the new St. Lawrence Seaway, is expected to make Chicago one of the world's leading port cities

By Edwin J. Knudsen

WHEN an underwriting syndicate last year turned over a check for \$22,874,666 to the Chicago Regional Port District to finance improvements in Lake Calumet harbor, forces were unleashed that were directed to make that city one of the world's foremost ports.

The huge check was from a \$24 million revenue bond issue, the difference between the bond issue and check being the sum taken

Initial project for Lake Calumet Harbor, showing waterways, three fireproof transit sheds, two grain elevators, and back-up warehouse



Supremacy

out for earnest money deposit and financing charges.

Chicago's bid for international trade also depends, of course, on the completion of two more waterway projects: The deepening of the St. Lawrence Seaway, and the deepening and widening of the 16.2-mile Calumet-Sag Channel—linking waterway between the Great Lakes and the Mississippi River system.

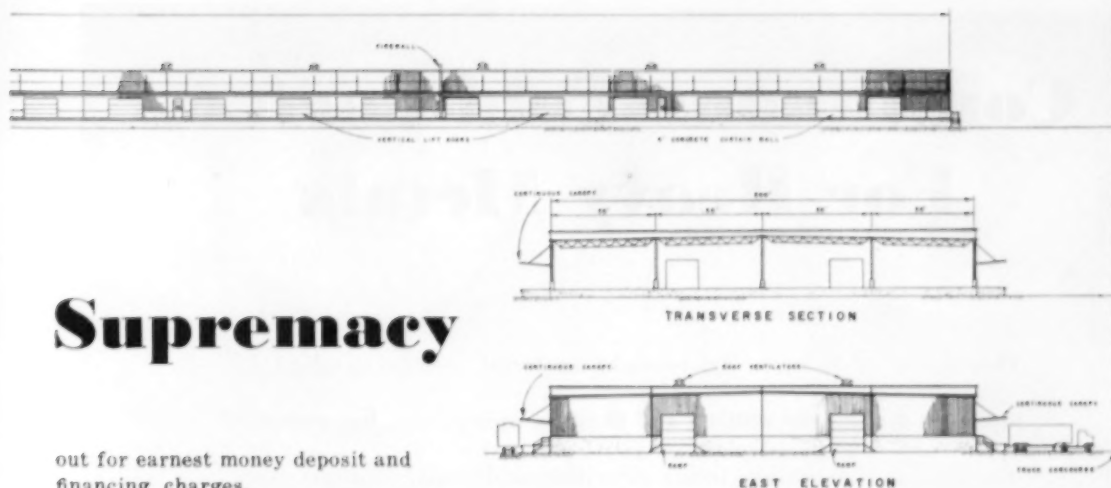
Winding through the southern half of Cook County, the Calumet-Sag Channel, often called Destiny's Ditch, has been classified as a "narrow, frustrating road-block in the vital Great Lakes-to-the-Gulf Waterway."

At its front door lies the highly industrialized area made up of Chicago and Northern Indiana. To the south lie the vast agriculture and industrial areas bordering on the Illinois and Mississippi Rivers.

A total of nearly four million tons of freight squeezed through its narrow lanes in 1954.

The Cal-Sag improvement gained momentum when, working under an initial Congressional appropriation of \$4 million, ground was broken Nov. 2, 1955. The first phase of this work will cost \$102 million, mostly from federal funds allotted annually by Congress. Army engineers estimate that improving navigation in the channel will increase traffic from the four million ton figure to more than nine million tons annually within five years.

Obtaining the \$24 million bond
(Please Turn to Page 94)



Above: Cross-sections of new 200,000-sq ft back-up warehouse for sorting in-transit goods

Below: Chicago Regional Port District map showing water routes accessible to the harbor



What Is the Calumet-Sag Project?

It is a navigation improvement project approved by Congress on July 24, 1946. It provides for a number of developments along the Cal-Sag Channel and the Illinois Waterway, specifically:

1. The Chicago Sanitary and Ship Canal from Lockport, Ill., to Sag Junction (the point at which Cal-Sag swings eastward)—a distance of 10.4 miles—would be widened from 160 to 225 ft.
2. The Calumet-Sag Channel from Sag Junction to the Little Calumet River—a distance of 16.2 miles—would be widened from 60 to 225 ft.
3. Reconstruction of bridges over the Little Calumet River, from Blue Island to Lake Calumet.
4. A channel, 225 ft wide and 9 ft deep, would be constructed in the Grand Calumet River from its confluence with the Calumet River near 130th Street, in Chicago, to its junction with the Indiana Harbor Canal and thence in that canal to the present head at 141st St.
5. A channel, 160 ft wide and 9 ft deep, would be constructed in the Grand Calumet River from its junction with the Indiana Harbor Canal to Clark St. in Gary, Ind.

Continuous-Fold Carton For Heavy Metals

The use of this new, light-weight material, easily handled by one man during the cutting and shaping operations, has reduced handling and assembly time; provided additional storage space

By Brooke S. Smith, *Traffic Manager, Beryllium Corp., Reading, Pa.*

A NEW, continuous-fold carton material, designed for the packaging of heavy metals such as rod, bar stock, etc., has been adopted for use by The Beryllium Corp., Reading, Pa.

Included among the many operational and space-saving advantages claimed by the introduction of this new type carton are:

Handling and Unloading: The unloading time required for a carload of lumber is about 12 hours, while a trailerload of the new packaging material can be un-

loaded by fork-lift trucks in $1\frac{1}{2}$ to 2 hours.

Assembly Time: A box made of the Fanfold material takes only about one-third of the time required to produce a box made of standard 1-in. lumber. The new material is scored to make folding to shape an easy operation, and the only nailing required is on the end blocks.

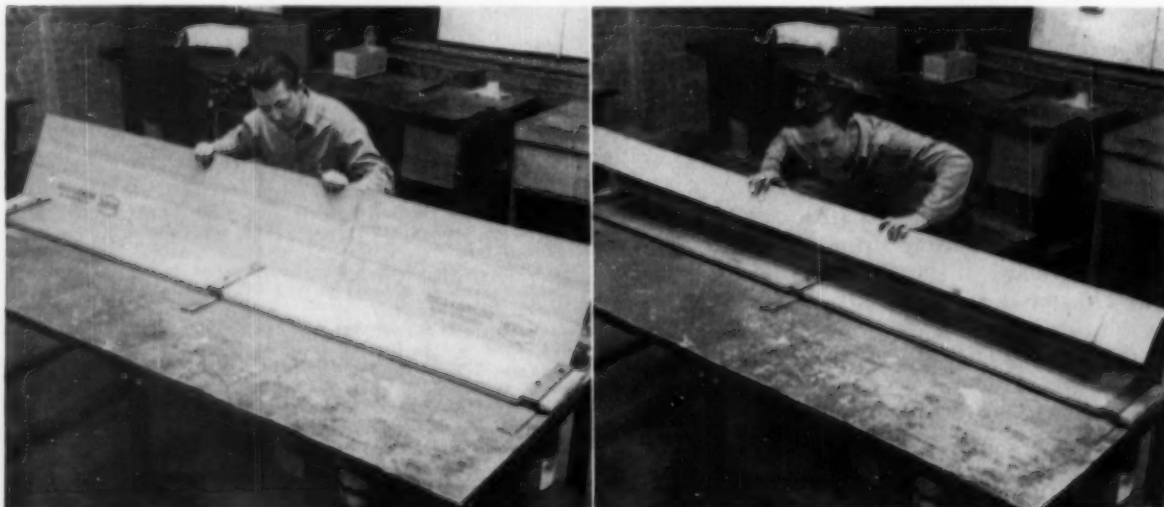
Light-weight Construction: The continuous-fold carton weighs about one-third that of a wooden box of the same size, thus effect-

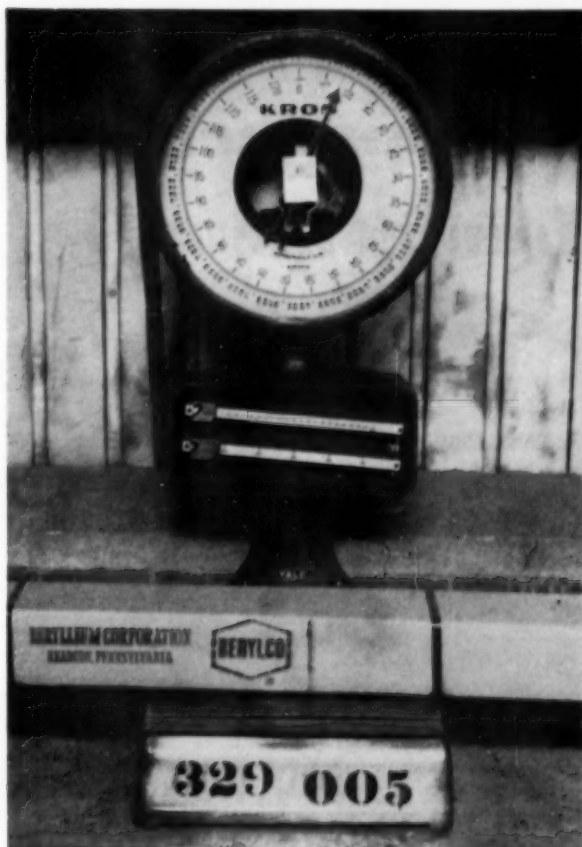
ing savings on freight charges for the company and customer.

Storage Space: The new material is made up in bundles, each bundle containing approximately 1,400 lineal ft. It has been found that less space is needed for storage of these bundles during stacking operations, as compared to the space needed for lumber storage.

Bending the cartons to shape as well as cutting the material (there is no waste or scrap as is the case when cutting lumber) are handled easily by one man. •

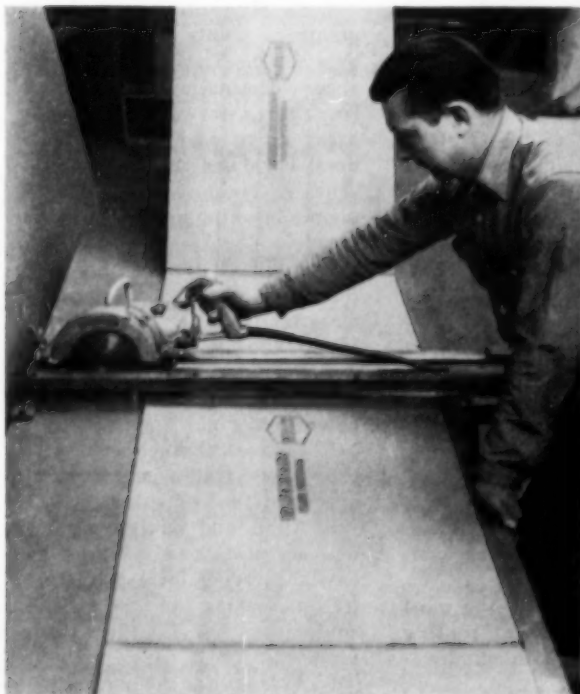
Bending the boxes to shape (the new material is scored to facilitate forming operation) is handled easily by one man





The continuous-fold carton weighs about one-third that of same size wooden box, effecting savings on freight charges

A table, 20 ft long, is used to cut the Fanfold to desired length. There is no waste or scrap such as in cutting lumber



The Flexible Approach to Traffic Management

MANAGEMENT has been and is being alerted to the value and advantages of scientific and competent traffic management. The elimination of exception ratings, commodity rates, increase in minimums, accessorial charges, and the increase in transportation rates and cost which have been doubled within the last ten years, have seriously increased the delivery cost of products and taken a larger bite out of the sales dollar—which necessarily must be reflected in the companies profits. Competent traffic managers are abreast of these various rate changes and take proper and adequate steps to see that the rates on the products that they receive or manufacture move on a proper and equitable basis.

Scope of Authority

The administrative traffic functions of Remington Rand Div. of Sperry Rand Corp. are handled by the General Traffic Dept., located in New York. This department has jurisdiction over all transportation services, domestic and foreign. It has the responsibility of making sure that the company secures proper and adequate transportation services at reasonable charges in accordance with the type of transportation service required.

Experienced Personnel

The Remington Rand General Traffic Dept. is staffed with specialists and competent personnel who are experienced in traffic functions, rates, auditing, claims, supervision, etc., and maintain complete classification and tariff

This company's readiness to use all the forms of transportation which afford speed without undue cost, is representative of the various methods used in an effort to keep abreast of the times

files covering all modes of transportation.

The department receives docket proposals covering rate and classification changes and subscribes to various publications that keep us abreast of changes in classification rates and traffic procedures. Dockets are studied and analyzed to see what proposals would effect products manufactured by the company or products of analogous nature, and proper action is taken before the ICC, Classification Committee and other regulatory bodies to see that just and equitable rates are secured. To achieve maximum effectiveness, the department maintains close contact with sales, purchasing, engineering and production.

Department Functions

The functions of the General Traffic Dept. are:

1. Instruct plant traffic managers and their organizations as to procedure and policy to be adhered to on transportation matters.

2. Advise vendors of the most efficient and economical routing they are to follow on inbound materials to plant.

3. Supply all plants with Classification Guides, showing the trade name of the products and the proper description to be used on bills-of-lading and shipping documents in accordance with the uniform and National Freight Classifications.

4. Supply routing cards for the plants to points with population over 5,000. These routing cards show: destination, rail rates, truck rates, forwarding rates, express rates, parcel post rates, breakdown and the preferred routing. These cards are used by plants in shipping outbound materials.

5. Audit all freight bills covering both inbound and outbound material from plants and branch offices, and file overcharge claims.

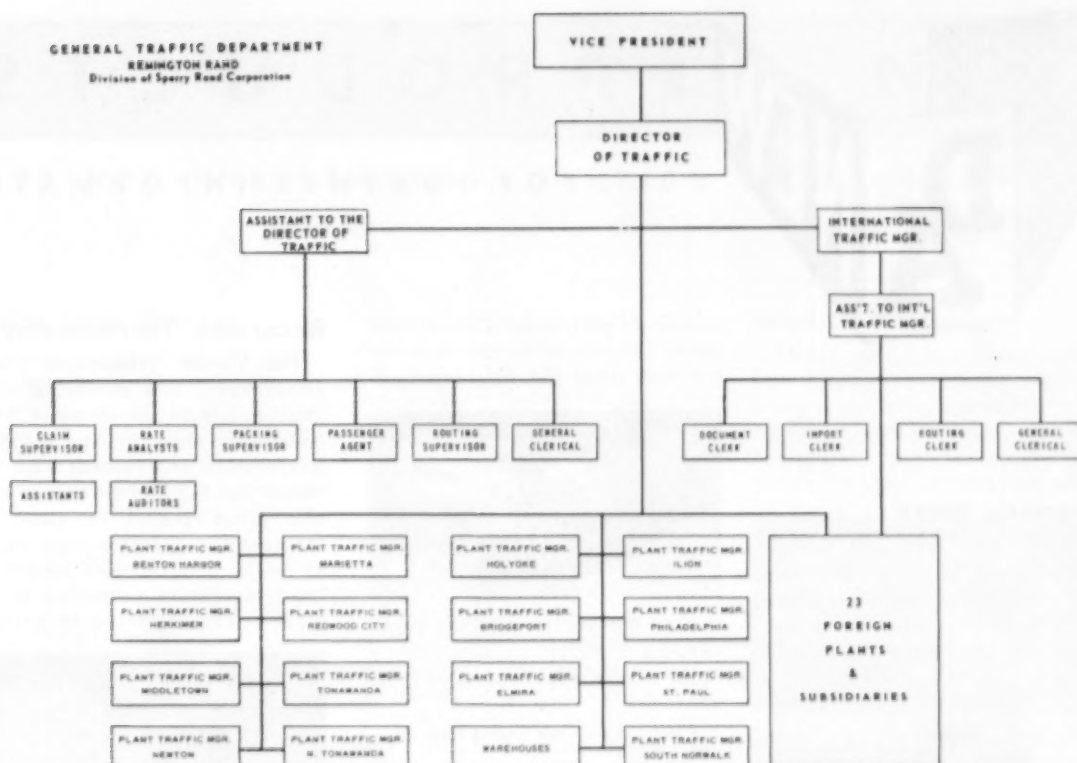
6. Process all claims for loss and damage on inbound and outbound material.

7. Instruct branch offices regarding traffic procedure and proper method of shipment.

8. Audit and analyze all local delivery costs and make all contracts covering local delivery, as well as seeking the type of leased equipment that fits particular needs.

9. Arrange for the movement of

GENERAL TRAFFIC DEPARTMENT
REMINGTON RAND
 Division of Sperry Rand Corporation



household goods of company personnel.

10. Make passenger reservations for the officials and employees of the company.

11. Approve method and type of packing of products before being standardized.

12. Make all arrangements for pool car shipments, transload cars, and forwarding from distribution points on an lcl basis.

13. Survey and make analysis of plant locations. Arrange for moving of plant equipment and stock, and secure proper commodity rate in connection therewith.

14. Compile tonnage records so that proper allocation may be made of freight movements.

Shipping and Handling

The shipping of Remington Rand electronic equipment, computers and Univac has presented many problems on account of the size and value of some of these products. A survey of the premises is made before an installation of Univac equipment, rigging



By V. R. Tupper
Director of Traffic
Remington Rand Division
Sperry Rand Corporation

as told to

John H. Frederick
DA Transportation Consultant

contracts are entered into, and insurance arrangements provided. The traffic department has found it feasible to ship electronic and tabulating equipment unboxed, thus providing large savings and improved efficiency in installation.

The General Traffic Dept. cooperates with various associations with a common interest, such as

the Typewriter Industries Traffic Assn. and the Steel Office Furniture Assn. Here common transportation matters are discussed and appropriate joint action taken.

The International Traffic Div., which is a part of the General Traffic Dept., handles all details in connection with foreign shipments. It instructs plants on special packing or other requirements, books space, prepares consular documents, obtains licenses, etc. It also handles all details in connection with import shipments. Details in connection with chartering planes to transport Univac and electronic equipment to foreign fields now are being developed.

By rate analysis; appearance before regulatory bodies in connection with rate and classification changes; continual study to take advantage of the many new types of transportation that are being offered; by always seeking new ways of doing the job better; the General Traffic Dept. is able
(Please Turn to Page 92)

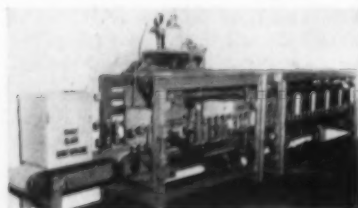


▶ PRODUCTS

... FOR FURTHER INFORMATION

Automatic Gluer

A new, fully automatic, carton top-flap gluer now is available from **General Corrugated Machinery**. It features a new closed-system gluer, is always ready and



requires no preparation and no clean-up or loss of time and material. Inside flaps are folded flat-wise, and receive lines of glue in adjustable quantity as required, through small nozzles from solenoid valve, followed by folding down of top flaps to enter the compression unit. The application of glue is spaced according to inside flap spacing.

Circle 32 on Card Facing Page 69

Tractor-Shovel

A larger model HO Payloader tractor-shovel with new features such as greater bucket capacity, torque-proportioning differential, planetary axles, hydraulic load shock-absorber, power-shift, etc., has been announced by **The Frank G. Hough Co.** This new unit has a heaped capacity of $2\frac{1}{4}$ cu yd and a struck capacity of $1\frac{3}{4}$ cu yd. In addition to a complete no-stop power-shift transmission and torque converter, these new units are equipped with planetary axles and

torque-proportioning differentials. Being introduced to the field for the first time, the torque-propor-

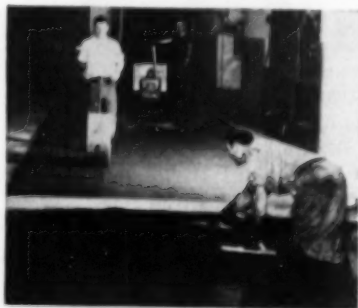


tioning differential combats wheel slipping. This feature adds greatly to the overall effectiveness of four-wheel-drive.

Circle 33 on Card Facing Page 69

Flooring Compound

An improved Steel-Hard flooring compound designed to stand up under extra-heavy steel-wheel trucking is announced by **The Monroe Co.** Now formulated with newly-discovered, granular plastic

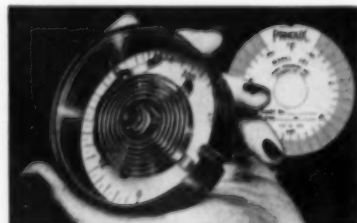


resins and extra-fine non-stone aggregates, Steel-Hard is reputed to produce an exceptionally hard, smooth, resilient floor. Heavy hand trucks, and trucks with narrow steel wheels roll quickly and easily over its surface. It is said to easily handle 20-ton loads. Steel-Hard can be used to patch or resurface any concrete, indoors or out. It is especially recommended for loading platforms and aisles.

Circle 34 on Card Facing Page 69

Recording Thermometer

The Pacific Transducer Corp. announces a new recording maximum-minimum thermometer. This instrument measures the ambient temperature and records both the lowest and the highest values over any given period of time. It features a replaceable paper chart on which a permanent record of the temperature excursion is recorded. The chart can be quickly



replaced and filed for future reference by simply unscrewing the thumb nut in the bottom of the case.

This thermometer comes in two ranges—minus 50 deg F to 250 deg F, or minus 50 deg C to 100 deg C.

Circle 35 on Card Facing Page 69

Truck-Railcar Device

The functional semi-automatic device for securing a highway truck trailer to a railroad flatcar was recently announced. The device, co-developed by **ACF Industries and Rail-Trailer Co.**, is a rugged, folding mast, which is power-raised to lock the trailer's kingpin; it supports the front end of the trailer independently of its landing gear. With the aid of this new device, one man equipped with a portable power wrench can perform the entire process of securing the trailer to the car, including the attachment of safety chains at the rear, in approximately two and one-half minutes.

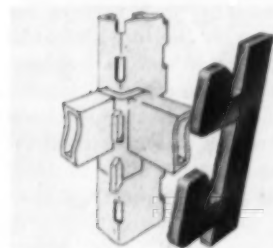
Circle 36 on Card Facing Page 69

and EQUIPMENT

PLEASE USE THE READERS' SERVICE CARD • • PAGE 69

Wedge Lock Device

Claimed to eliminate bolts, nuts, cross bracing and erection welding, the floating wedge lock, manufactured by **Sturdi-Bilt Steel Products, Inc.**, joins bulk bin shelves to corner uprights in such a manner that increased loading tends to

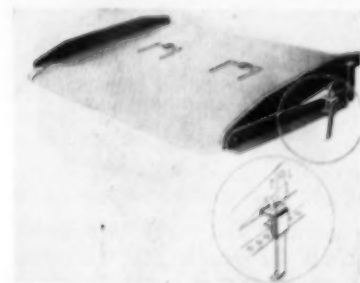


increase rigidity of the entire structure. New steel bulk bins also have been introduced as an addition to this firm's line of handling products. These bins are designed for the hand storage of goods, and feature interchangeability of parts—with all parts reusable at all times.

Circle 37 on Card Facing Page 69

Improved Ramp

A new improvement called the free floating retractable stop has been made on its bridge ramp by



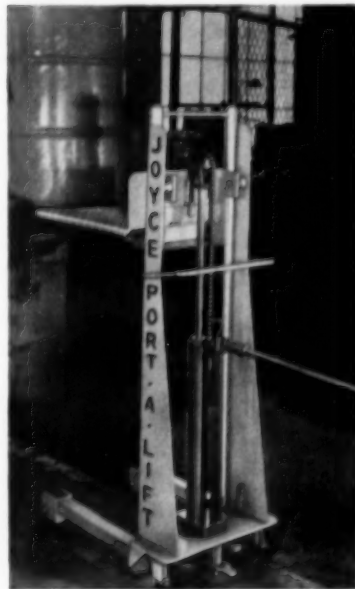
Elizabeth Iron Works. According to the manufacturer, this modification eliminates breakage or bending of the ramp's locking device

and stops. When the ramp, which has a load capacity of 15,000 lb, is not in use, the self-leveling floating arms lie flush with the platform. The ramp's weight is distributed over its entire surface instead of on the ends of the stops.

Circle 38 on Card Facing Page 69

1/2-Ton Capacity

The **Port-A-Lift**, manufactured by the **Joyce-Cridland Co.**, is of light-weight, welded steel construction. Large 5-in. front wheels provide mobility, and castored rear wheels give it exceptional maneuverability. The 24x24-in.

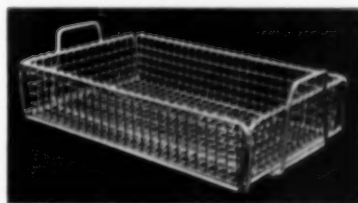


non-skid platform can safely handle bulk or palletized material. Waist high controls provide instant and accurate raising and lowering of loads. Four needle-bearing rollers, factory lubricated for life assure effortless lifting. The machine is powered by a hydraulic jacking unit.

Circle 39 on Card Facing Page 69

Wire Container

Model RJ 12-20-4 designates a new heavy-duty materials handling wire basket manufactured by **Jaxon Wire Products.** The new container which features a tri-frame is arc-welded at eight



points. Frame is constructed of 10 gage wire. Body is welded 11 gage wire with wrap-around top affording maximum side and end support. Mesh opening is $\frac{3}{4}$ in. Container is 12 in. wide, 20 in. long and 4 in. deep. Handles are part of the frame.

Circle 40 on Card Facing Page 69

Cover Stacking Plates

The **G. B. Lewis Co.** has announced the availability of special caster stacking plates to their line of woven wood-and-wire box trucks. These plates, firmly riveted to each corner of the truck, make possible safe, clean, multiple



stacking. They have a circular rim, as shown, approximately 1 in. deep, which acts as a guard rail for each caster on the truck stacked above.

Circle 41 on Card Facing Page 69

DA NEW PRODUCTS and EQUIPMENT

CONTINUED FROM PREVIOUS PAGE

Lift-Truck Accessory

This Roll Clamp, manufactured by Towmotor Corp., for use on fork-lift trucks, enables the operator to lift, transport and stack heavy rolls of paper, and similar loads, with greater speed and safety. The upending roll clamp,



shown attached to a model LT-56 fork-lift truck, rotates heavy loads 90 deg from the horizontal to the vertical position, or vice versa. Curved shoes on the ends of the clamp arms are sand-blasted to provide a firm gripping surface.

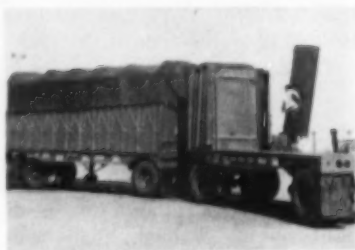
Circle 42 on Card Facing Page 69

Plastic Trailer Panels

A truck trailer that is more than 1,000 lb lighter than ordinary trailers and can be converted quickly from a van to a flat-bed type, has been developed through the use of reinforced plastic by Plasti-Glas, Inc. The new 24-ft trailer has knock-down side and end sections that can be erected in minutes and stacked against the front of the trailer when not in use. The 4x8-ft sections are molded from glass fibers and Vibrin polyester resin.

The plastic side and rear sections weigh as little as 65 lb, but despite their light weight they

won't dent, rust or be affected by weather. The sections also are im-

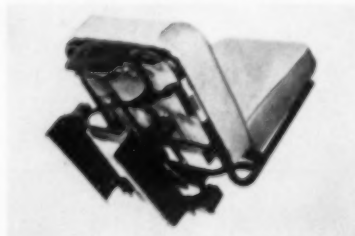


pregnated with color so they never need painting.

Circle 43 on Card Facing Page 69

Truck Seat

The Bostrom Mfg. Co. has announced that it has designed universal risers which enable the installation of its Level Ride 80 suspension seat in virtually every make or model truck. The Level



Ride 80 is claimed to be the first truck seat ever to adapt the suspension principle to the relatively light weight of a human being. Tension on the springs is adjusted according to the weight of the individual so that the seat provides maximum comfort for any driver, whether he weighs 100 lb or 275 lb. With the addition of the new universal risers the seat easily can be adapted to replace existing equipment merely by removing the original seat risers.

Circle 44 on Card Facing Page 69

LP-Gas Adapter

Development of a new line of LP-Gas hose adapters for use on engines up to 60 hp has been announced by American Liquid Gas Corp. These new units were designed for a simple and economi-



cal method of effecting LP-Gas conversions on engines which are not adaptable to spud-in type installations. They may be used for either vapor or liquid withdrawal conversions. For use on tractors, fork-lifts and industrial trucks, the hose adapters also may be used on any type of internal combustion engine up to 60 hp.

Circle 45 on Card Facing Page 69

Compact Floor Sweeper

A compact new 28-in. rider-type power sweeper for sweeping factory aisles and congested areas has been developed by the G. H. Tennant Co. It is specially designed for areas in factories, bakeries, garages and warehouses where larger sweepers cannot be used.

Known as the Model 50, the new sweeper is 60 in. long, without

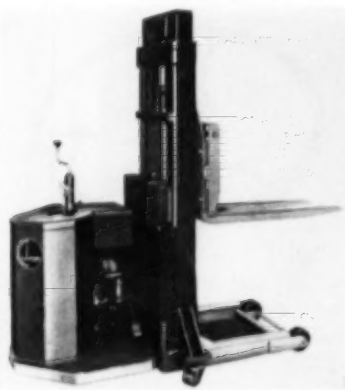


sidebrush, and turns in approximately its own length. Traveling at speeds of 2 to 8 mph, it cleans a 28-in. path (40-in. with optional side brush) and reportedly can sweep up to 80,000 sq ft an hour.

Circle 46 on Card Facing Page 69

Engine-Powered Truck

A straight engine-powered high-lifting truck, designed to operate in aisles as narrow as 6 ft, is being introduced by **The Colson Corp.** The unit, which is the fourth



in the line of Handlers, is available in capacities up to 4,000 lb. Lifting heights up to 15 ft are available. Understructures for skids or pallets, and various load-bearing forks, grabs and arms are provided for different requirements.

Circle 47 on Card Facing Page 69

Drum Liner

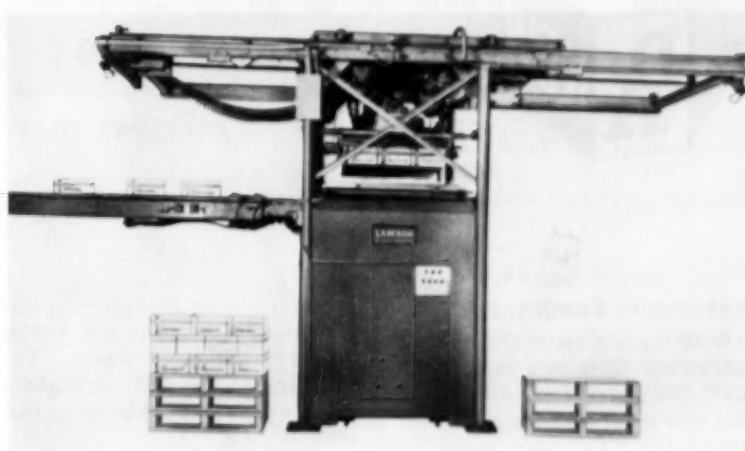
A new type of drum liner produced by **Denver Plastics, Inc.**, and weighing only 6-1/2 lb, keeps corrosive industrial acids from eating their way out of standard 15-gal metal containers. The acid-resisting liner is made of Bake-



lite polyethylene by a new extrusion technique instead of conventional molding. Flat extruded sheets form circular top and bottom ends as well as the cylindrical walls of this leak-tight liner. The nonshattering liner can be filled and emptied either inside or outside the metal drum it is made to fit. It stands about 19 in. high, with a diameter of about 15 in.

Circle 48 on Card Facing Page 69

New Model Pallet Loader Introduced



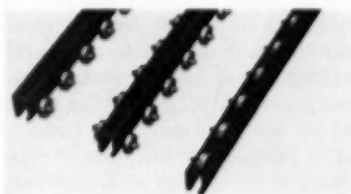
Lamson Corp. announces an entirely new low capacity, fully automatic pallet loader. The Model G loader has a capacity of about 20 cartons a minute, and can be justified at a capacity as low as five per minute. It is designed to handle pallets up to 48x48 in., with a maximum load width including overhang of 52 in., and maximum length of 50 in. The machine can be loaded with pallets one at a time or in stacks. The weight of a load on a pallet is unlimited since

the pallet sets directly on the floor and no weight is carried by the loader. The weight of a layer of cartons has been limited to about 600 lb, but can be increased with moderate revisions. At the present time, the loader has been designed to handle sealed cartons with a top diagonal dimension not in excess of 21 in. The loader can be changed over to a different sized carton by changing the grid of the pick-up head.

Circle 50 on Card Facing Page 69

Rack Conveyor Strip

A model modification has been made in the new Flow Track, a rack conveyor strip, by **The Rapids-Standard Co., Inc.** The original track was designed with wheels mounted in the track so



that it could be used in any storage application, regardless of the width of the material stored. The new model is designed for use where the same width material is held at all times. The wheels of the new model are mounted on the sides of the track in a low position so the track acts as a guard rail.

Circle 49 on Card Facing Page 69

Trailer Side Racks

Plasti-Glas, Inc., has just made available reinforced plastic side racks for flat bed trailers. The racks are being made for 24-, 35-, and 40-ft standard make flat bed trailers. 78-, and 90-in. heights are available for all three lengths.



According to the manufacturer, the racks are light-weight, are not subject to shrinkage or expansion, and cannot absorb moisture. One man can easily remove and stack the racks on a 24-ft trailer in less than 15 minutes.

Circle 51 on Card Facing Page 69
(Please Turn Page)

DA NEW PRODUCTS and EQUIPMENT

CONTINUED FROM PREVIOUS PAGE

Automatic Ramp

With the automatic truck ramp, trucks are their own ramp tenders. Completely truck-actuated, this new ramp requires no manual attendance. This ramp, manufac-



tured by the Loomis Machine Co., is available in recessed and self-contained models. Both incorporate precision counterbalancing and simple, rugged design and construction. There are no chains, cables, pipes, pumps, gears or motors. Both models are maintenance-free.

Circle 52 on Card Facing Page 69

Battery Charger

K-W Battery Co. announces a new use for the complete battery power unit, now especially designed for rider type lift trucks. Previously the unit was available only for walkie type trucks. The



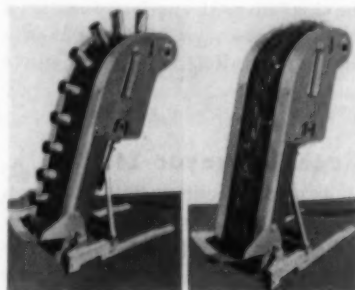
unit has a permanently mounted charger, thus permitting the truck battery to be given a power boost whenever the truck is not in oper-

ation. It can be charged by plugging the charger into any 110 or 220 volt, 60-cycle outlet. The charger can be left on without damage to the battery or to the charger.

Circle 53 on Card Facing Page 69

Magnetic Elevator

Introduction of a permanent magnetic elevator-conveyor for automated handling of items such as bottle-caps, cans, nails, bolts, blanks, finished parts, scrap, etc., is announced by Eriez Mfg. Co.



Called the Eriez Magna-Mover, the magnetic conveyor features an extended transition section which permits easy discharge into carts, pallets, bins, etc., or into other machinery in a line. It has a bed which is curved gently on a radius of 15 in. to allow handling of relatively large objects with high centers of gravity. The fork-like legs of the base, only 1½ in. high at their highest point, will fit under low pallets, skids, machines, etc., conserving floor space and providing for close-up operation wherever desired. The inclined magnetic bed is adjustable to any pitch from 60 to 90 deg relative to the floor line.

Circle 54 on Card Facing Page 69

Steering Aid

A new steering aid for materials handling vehicles, developed by Kosch Mfg. Co., is a combination steering wheel and automatic clutching device. Chances of accident to operators of industrial

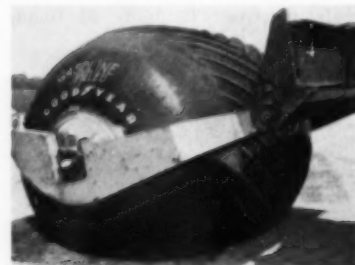


trucks and other vehicles with small turn wheels are lessened because of the no-kick-back feature of this steering device. The steering-aid holds the steering gear stationary, no matter how much kick-back the guide wheels receive. The unit automatically releases when the steering wheel is turned, for normal steering.

Circle 55 on Card Facing Page 69

Rubber Tank

A watermelon-shaped rubber tank has been developed by the Aviation Products Div. of the Goodyear Tire & Rubber Co. for use in the bulk transportation and storage of fuels and other liquids. Called the Rolli-Tanker, the container can be rolled over ground,

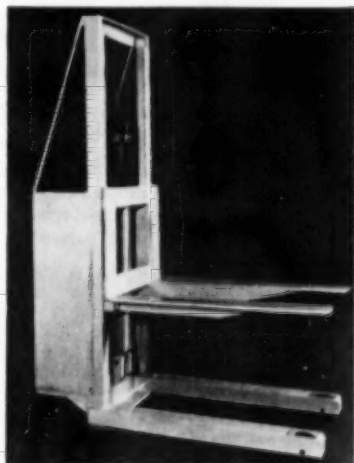


floated in water and dropped without bursting. Mounted on hubs and axles to permit easy handling, the tanks may be towed manually or by vehicle. The containers have excellent flotation characteristics because of extremely low ground-bearing pressure. Only 30 lb of drawbar pull—easily supplied by one man—are needed to roll the storage units.

Circle 56 on Card Facing Page 69

Skid Lift Truck

Hydro-Lift Co. announces a new, portable, hydraulic skid fork-lift truck to bring material to work heights and for loading or unloading at heights up to 52 in. Truck has a maximum load capacity of



5,000 lb. Fork length is an extra-long 56 in. for handling long skids; width is 24 in. Electrically operated, push-button controls lower or hold load in position without power. Normal rate of lowering or raising is 1 in. per second; however, speed can be regulated by adjusting balanced piston-type flow control valve.

Circle 57 on Card Facing Page 69

Drum Upender

The newly developed Morse Mfg. Co.'s drum upender No. 32 has a 40 in. handle, offset 35 deg for maximum efficiency in raising drums from horizontal to vertical. A 1 1/4 in. hook provides adequate

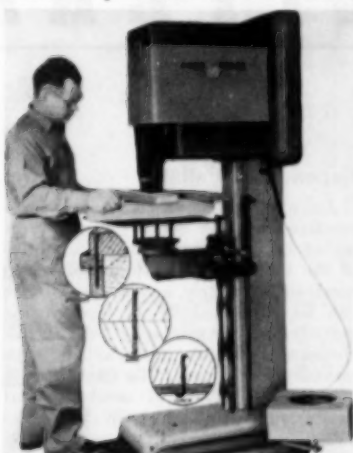


clearance for the largest chime. A 2 1/2 x 8-in. toe plate spreads lifting pressure over a large area to prevent drum damage. This new tool, engineered for manually upending heavy drums with a minimum of effort, makes drum handling a fast, one-man operation.

Circle 58 on Card Facing Page 69

Power-Driven Nailer

With the addition of its newest model, Hercules-9, the Auto-Nailer Co. now presents five automatic,



power-driven nailers, ranging in utility from the nailing of the most delicate moulding, to nailing 2 by 4's and heavier stock. The nail sizes range from 20 gage to 13 and lengths from 1/4 in. to 2 3/4 in. The work areas range from 9 3/4 in. to 35 in. height and from 2 3/4 in. to 15 1/2 in. depth. The new model dispenses its wire from an expandable carton. The nailers will cut blunt, needle-point or headed nails; will clinch or brad the points, if desired, when total thickness of the work is within length limitations.

Circle 59 on Card Facing Page 69

New Lubricant

A new, instant-drying, long-lasting graphite lubricant now is available, in 6-oz spray containers.



Manufactured by American Resin Corp. this new graphite spray is applied to both metallic and non-metallic surfaces. There is no surface build-up or drippage of the

lubricant. Spray Graph provides effective lubrication at temperatures ranging from 100 deg below zero to 800 deg F. It does not pick up lint, dust or dirt. Oxidation, corrosion and friction are greatly reduced and sticking is prevented. The lubricant also is distributed in bulk.

Circle 60 on Card Facing Page 69

Double-Faced Tapes

Two double-faced tapes have been announced by the Permacel Tape Corp. The tapes, designated P 94 and P 941, are considered especially practicable for laminating thin sheets of either like or dissimilar metals where paper or cloth backings would not be too desirable. The high elongation and tensile strength of the tapes make them ideal for bonding irregular surfaces. The fact that they may be easily die cut offers the prospect of substantial production savings when many identical shapes are required.

Circle 61 on Card Facing Page 69

Portable Carton Stapler

Fastener Corp. has introduced a line of foot power carton staplers for the small plant, and for use as an auxiliary carton stapler in bigger plants. It is designed for easy portability, weighing only 38 lb.



This stapler comes with various stapling heads, for various jobs. There is a post model for stapling bottoms of cartons, and a straight arm model for telescopic type cartons and for stapling corrugated fillers. They are also available in air operated models.

Circle 62 on Card Facing Page 69

**FREE**

LITERATURE

Warehousing and Distribution

The current issue of "Find Out," a periodical published by North Pier Terminal, tells how various companies are utilizing the flexible office and warehouse plan at North Pier. Included also are articles on choosing a location, and other subjects of interest.

Circle 63 on Card Facing Page 69

The Traffic Man

Norfolk and Western Railway Co. has published a picture-story book entitled "Your Daddy, the Traffic Man." Illustrated with cartoon-type, full color drawings, the booklet explains in simple language the duties of a traffic man and his place in society.

Circle 64 on Card Facing Page 69

Strapping Data

A new catalog sheet, recently published by Allegheny Steel Band Co., gives the widths and thicknesses, number of feet per pound, and tensile strength of both light- and heavy-duty strapping in all available sizes. Four different styles of reel carriers, a complete list of accessories, a wide selection of tensioning, shearing and sealing tools, and seals in three different styles of copper-plated steel also are shown.

Circle 65 on Card Facing Page 69

Overhead Cranes

A complete presentation of the variety of handling jobs being performed by Whiting overhead cranes is offered in a new booklet, "Presenting Whiting Engineered Cranes." Installation photographs show cranes in action for foundries, railroads, power plants, and general industry.

Circle 66 on Card Facing Page 69

Industrial Wheels

The American Pulley Co. announces a new catalog entitled, "Industrial Wheels." The folder, HW-56, describes design and construction features of the line of 128 different wheel combinations as well as data on semi-steel, pressed steel and semi-pneumatic wheels.

Circle 67 on Card Facing Page 69

Expendable Pallets

An eight-page brochure has been prepared by The Mead Corp. It promotes the advantages and economies of the Poke-Pak and Glide-Pak in the handling of nearly any material that can be palletized. Mead Chestnut is manufactured primarily of semi-chemical hardwood pulp and supplementary long fibres. The Glide-Pak is also manufactured of semi-chemical hardwood pulps, but with the additional tensile strength required when special push-pull attachment lift trucks pull the unit onto very thin blades.

Circle 68 on Card Facing Page 69

Service for Sale

Midland Warehouses, Inc., has made available a reprint entitled, "They Sell Service." The article outlines the services and facilities of Midland, a public warehousing firm.

Circle 69 on Card Facing Page 69

Elimination of Fumes

Effectiveness of the OCM Catalytic Exhaust Purifier in cleaning up the carbon monoxide, aldehydes, odors, and hydrocarbons found in the exhaust stream of a vehicle powered with LP-gas is given in a report issued by Oxy-Catalyst, Inc. The findings claim that the OCM Catalytic Purifier eliminates an average of 99.7 per cent of the carbon monoxide, 88.8 per cent of the hydrocarbons and 83.9 per cent of the aldehydes at governed speed and 100 per cent at idle.

Circle 70 on Card Facing Page 69

Appliance Elevating Truck

A new brochure describing a new one-man truck, Model A-2, handles air conditioners and appliances from truck to ground, upstairs or down, and right into customer's window, has been made available by the Fairbanks Co.

Circle 71 on Card Facing Page 69

Powered Tailgates

Publication of a new catalog, No. 151, describing Model H-6 series, power-lift tailgates is announced by Hercules Steel Product Co. The catalog describes the 600-lb-capacity electrically-powered gates.

Circle 72 on Card Facing Page 69

Industrial Packaging

Ply-Veneer, a new panel stock for industrial packaging application, is explained in a brochure announced by Weyerhaeuser Timber Co. The folder lists specifications and illustrates various uses for the new panel material.

Circle 73 on Card Facing Page 69

Recording Instruments

Literature describing and illustrating the latest models and various types of impact recording devices, has been published by The Impact Register Co. The instruments, used on land and in the air, measure and record the impact received by railroad cars, compare riding qualities of cars, and can be used in the testing of all types of vehicles.

Circle 74 on Card Facing Page 69

Facts on Fittings

A complete line of fittings for wire rope and chain is shown in the new 28-page catalog, No. 950-1, issued by the American Hoist & Derrick Co. The catalog includes engineering data and charts for each of the many types of fittings.

Circle 75 on Card Facing Page 69

All-Purpose Model

A booklet, giving specifications and performance data on a new all-purpose model tractor, has been released by Tow-Bear. New design encompasses best features of the two previous models. The tractor is a three-wheel, entirely hydraulic-electric operated unit, using industrial or automotive batteries.

Circle 76 on Card Facing Page 69

Box Sealing Methods

A new revised edition of the Little Packaging Library Booklet, "How To Seal Corrugated Shipping Boxes," has been published by Hinde & Dauch. Subject matter outlines procedures recommended to cut losses, reduce waste, speed up and simplify sealing methods. Both hand and automatic sealing procedures are discussed including application of adhesives, gummed and pressure-sensitive tape, stitches, staples and steel bands.

Circle 77 on Card Facing Page 69

Tacker-Stapler

The Industrial Fastener Div. of The Heller Corp., has issued a bulletin (1503-17) on its pneumatic tacker-stapler designed for one-hand, high-speed fastening. The bulletin gives specifications of the stapler with and without anvil and describes various applications of the unit on production lines, in shipping rooms and for maintenance department.

Circle 78 on Card Facing Page 69

Dehumidification Facts

This bulletin, released by the Abbeon Supply Co., is based on humidification and dehumidification equipment in over 2,250 industrial plants. The bulletin examines the problems that most frequently arise and illustrates the practical answers to these problems.

Circle 79 on Card Facing Page 69

Battery Training Manuals

Gould-National Batteries, Inc., conducted a series of traveling one-day training schools on motive power battery technology, selection, charging, maintenance and repair in all the major industrial concentrations in the country where industrial trucks are used. The company compiled the material plus additional data developed on tour into a 44-page Training Manual, now available, with 64 photographs, diagrams, and tables specifically designed to enable battery users to organize battery training programs in their own plant.

Circle 80 on Card Facing Page 69

Case Histories

Six case history applications of the heavy-duty corrugated container are illustrated in a new four-page brochure, published by Gaylord Container Corp. Specific examples of benefits and savings which have resulted from the use of the Drumpak, are shown.

Circle 81 on Card Facing Page 69

Tape Dispensers

An illustrated broadside, CP-8326, released by Better Packages, Inc., gives uses, specifications, and prices on dispensers for gummed and pressure sensitive tape.

Circle 82 on Card Facing Page 69

Tag Sample Kit

A free sample kit containing a wide variety of tags is being offered by the Rothchild Printing Co. This kit contains actual samples of tags in various weights, on different stocks, unusual shapes and forms, high gloss inks, and in single or multi-page booklets.

Circle 83 on Card Facing Page 69

New Battery Line

The new line of batteries which features increased life and higher instantaneous discharge rates, is described in a catalog published by Exide Industrial Div., The Electric Storage Battery Co. A cutaway drawing shows details of construction, including the heat-resistant polystyrene jar, the support ledges molded into the jar walls from which the battery elements are suspended, and the molded one-piece polystyrene dowels.

Circle 84 on Card Facing Page 69

Handling Developments

Articles on the latest developments in handling lumber, unitizing brick and tying forms in concrete construction appear in the Spring 1956 issue of *The Signode Seal*. This company publication of the Signode Steel Strapping Co., also contains information for the advancement of better packaging, shipping and handling.

Circle 85 on Card Facing Page 69

FILMS

Trucking and Civil Defense

Availability of a new motion picture entitled, "Rehearsal for Disaster," depicting the important Civil Defense role of this nation's 10 million trucks in the event of a national emergency or disaster, was announced by the American Trucking Associations, Inc. The film demonstrates fast, flexible truck service being redirected to aid in time of crisis. Such tasks as transporting people to safe ground, hauling supplies and equipment, and working with other forms of transportation in similar efforts, are described and illustrated.

Circle 86 on Card Facing Page 69

Transport Policy

A new motion picture dealing with the report of the Presidential Advisory Committee on Transport Policy and Organization, now is available from the Association of American Railroads. Entitled, "The Right to Compete," the 14-min technicolor sound film explains the public significance of basic recommendations of the Cabinet Committee report. The 16-mm film traces the growth of free competitive enterprise, with special emphasis on the part played by transportation.

Circle 87 on Card Facing Page 69

For prompt service, use postage-free postcard provided to obtain FREE LITERATURE and NEW PRODUCT information described in this issue. All material is FREE unless otherwise noted.

Wire Coil Racks

Jarke Mfg. Co. recently introduced a new line of wire coil racks, which are said to simplify wire coil storage and reduce warehouse space requirements. Each rack is virtually of one-piece construction and a 3-in. under clearance permits fork-lift entrance from all four sides. Capacity of each rack is 4,000 lb.

Circle 88 on Card Facing Page 69

Belting Catalog

This belting catalog, issued by C. R. Daniels, Inc., first lists the belts by their uses; then there is an individual section for each specific belt. Pages are designed to make the information instantly available, with close-up photographs of actual installations.

Circle 89 on Card Facing Page 69

Build-It-Yourself Assembly

A bulletin, describing and illustrating materials handling equipment, including the hand-powered overhead traveling crane, electric crane bridges, trolley hoists, cable hoists, and a build-it-yourself crane assembly package, has been presented by the Conco Engineering Works.

Circle 90 on Card Facing Page 69

Multi-Purpose Attachment

Little Giant Products, Inc., now manufactures and sells the multi-purpose gripper arms for lift trucks. The arms, which feature camber to support the load and toe-in at the tips to grip the load, are available in multi-purpose, low pressure, and grip-o-lift types.

Circle 91 on Card Facing Page 69

Platform Bodies

Availability of a new two-page two-color catalog, LL-2945, descriptive of the line of steel platform bodies, is announced by Galion All-steel Body Co. The new catalog describes and illustrates various models, construction details, capacities, sizes and condensed specifications. Recommended matching hoists also are listed.

Circle 92 on Card Facing Page 69



Ingots of aluminum, received from suppliers, are handled by fork-lift trucks as unskidded unit loads at the new plant



A section of roller conveyor at discharge end of crusher eliminates stopping the crusher to remove the filled bins

The Unit Load in Handling

THE shipping of ferro-alloys (refined metals) in unit pallet loads rather than in traditional bulk shipments has accounted for approximately 35 per cent of production at the new Graham Division plant of the Vanadium Corp., Graham, W. Va.

Power Trucking

Industrial power trucking provides the sole means of shipping the ferro-alloys from the plant and, in addition, plays an important part in the handling of this material through processing, finished storage and shipping.

A relatively small percentage of the plant's production is in the form of powders with the bulk consisting of irregular shaped chunks uniformly screened to sizes ranging from $\frac{1}{2}$ to 3 in.

Unit Load Shipping

This material is shipped in: 1. Non-returnable wooden pallet boxes. 2. Steel drums steel-strapped to disposable pallets. 3. Bags steel-strapped to disposable pallets. 4. Large, steel drop-bottom containers having a capacity of 14,000 lb each. 5. In bulk carload shipments. The advantage of making available this variety of ship-

Unit load shipments account for some 35 per cent of this plant's production as a result of pallet/fork-truck system used in materials handling operation

ping methods is to meet the various requirements of every type of consumer.

Speed and Efficiency

Although the cost of palletized ferro-alloy initially is slightly higher because of the additional cost of the pallet container, this is generally offset at the consumer's plant by permitting more rapid unloading, more efficient storage, easier identification of the contents of the pallet containers and better inventory of material on hand.

The alloys are prepared in electric furnaces from high-grade ores supplied by the company's mines in the Continental United States, South America, South Africa, and Turkey.

Following refining, the metal is cast in molds, cooled, and emptied on the casting floor. Here it is broken up into easily handled pieces and loaded into drop-bottom pallet bins. Purity of the finished product is further assured by sorting out any slag which was not removed by refining.

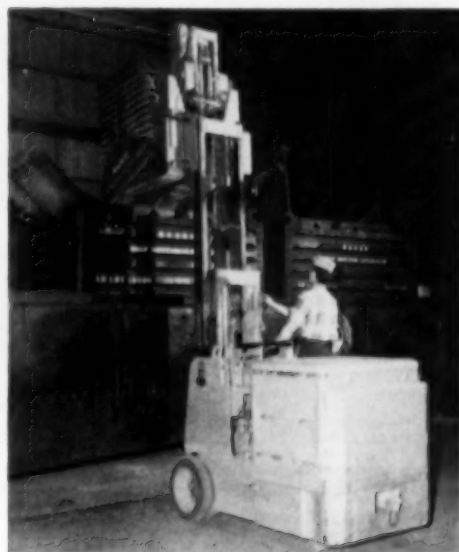
Fork Truck System

Fork-lift trucks of 6,000-lb capacity carry the loaded pallet bins of metal to a crushing and screening operation from which it emerges, screened to size, into other unit-load containers ready for shipping.

The type of container employed at the discharge end of the crusher depends on the method of shipping requested by the con-



The orders are stored in bottom-dump skid hoppers to await shipment. Some 1,600 hoppers are in use at any given time



Hopper containers are loaded without being removed from the car on which they are received

and Shipping

By G. N. Musick, *Field Engineer*

*Edison Storage Battery Division
Thomas A. Edison, Inc.
West Orange, N. J.*

sumer for the particular order being processed. Orders specified for shipment in disposable pallet containers, accounting for approximately 35 per cent of the plant's production, are discharged directly into these containers at the crusher. Following steel strapping, these one-way pallet containers are carried directly to shipping by fork-lift truck and are stowed in outgoing boxcars.

Orders for ferro-alloys to be shipped in bulk or in drop-bottom hopper containers are discharged from the crusher into tote boxes which are carried by fork-lift truck either to point of stowage inside boxcars where they are dumped or to the hopper containers which remain, during loading, on the gondola cars on which they are received.

Ferro-alloys packaged in drums and bags for shipment on disposable wooden pallets account for a relatively minor amount of the company's production. This material is carried from the crushing and screening operations in skid hoppers by fork-lift truck to a packaging operation, then to shipping.

(Please Turn to Page 93)



Bulk shipments are emptied directly into box cars from the skid hoppers into which they were discharged at crusher

Pallet-box loads stowed directly in outgoing carriers is one of the three shipping methods dependent on power trucking





Bagged salt is transported from bagging machines to skids, then to the shipping room or directly to outgoing carriers



Some 70 individual, 4-lb salt pockets are palletized, and stacked three-high in the warehouse by electric fork truck

Pallet/Skid Case Study

Ambidextrous Answer To a Two-Faced Problem

Fork trucks and pallets or platform trucks and skids? Both find a place in this operation, which includes shipping and warehousing applications of various type bags, packages, pockets and cartons

FAST, economical and safe handling of loads of salt from packing stations to storage and/or shipping is a major reason why The Leslie Salt Co., Newark, Calif., is able to produce more than 200,000 tons of this product annually.

This company not only refines salt but also manufactures crude salt by means of solar evaporation of sea water over an area of about 25,000 acres.

Container Variety

Refined salt is shipped in 25-, 50-, and 100-lb bags, 4-, and 10-lb pockets, square cartons, and 26-oz round packages. The wide variety of containers which must be handled presented a problem in the selection of some handling equipment which could meet the ever-changing demands of different types of containers, plus the element of travel from the various sacking and packing lines to either

storage or shipping. Electric-powered industrial trucks were the answer. Both platform and fork trucks are used throughout the entire operation.

Handling Efficiency

In the warehousing operation it was found to be more efficient to divide each day's schedule between skid and pallet handling, according to whether the packages were to be shipped or stored. The company



Portable ramps are used when platform trucks move the skidded loads of bagged salt from dock to outgoing carrier



Cartons stacked to ceiling limits in warehouse. 154 cases may be stacked per cube, taking advantage of air rights



An extensive system of conveyors is used to move the large volumes of crude salt which are stored in open yard area

Loaded skids lined up for movement to shipping dock. This room is used for goods to be shipped on a particular day



found that it was faster and easier to load a carrier using platform trucks and skids rather than fork trucks and pallets.

On the other hand, the high stacking involved in storage operations required the services and advantages of the latter equipment.

Palletizing and Stacking

Some 70 individual 4-lb salt pockets are palletized and stacked three-high in the warehouse. The

defined shape of these pockets easily lends them to palletizing.

Skid Handling

The bagged salt is transported from bagging machines to skids which then are transported to the shipping room or directly to outgoing carriers. It was found that the operators inside a carrier could unload faster and more easily from skids.

Cartons of salt, as well as goods

to be shipped at a later date, are easily handled, palletized and stacked by fork truck in the warehouse.

Ramps and Conveyors

Portable ramps are used to span the distance between the dock and carrier floor.

Included in the materials handling operation, is an elaborate system of conveyors, used to move large volumes of crude salt stored in the open yard area.

These handling methods, in comparison with the previous methods used, have saved the company valuable time, increased available storage space, reduced manhours, handling and operating costs, and eliminated excessive manual effort.

Cost & Time Reduction

One of the biggest advantages of the equipment is the low maintenance time and costs, plus the negligible amount of time the trucks are out of service.

The vehicles are given a routine inspection approximately every three weeks. Since the trucks are operated only eight hours a day, only one battery, which is charged at the end of the shift, is needed for each vehicle. Battery charging is accomplished with three motor generators having multiple outlets.♦

The Terminal Manager and Labor Relations

Good employee relations are the cornerstones upon which good labor contracts are built—to obtain good relations, the terminal manager must be firm but fair, and know all the facts

By Benjamin R. Miller
*Director, Industrial Relations Dept.
American Trucking Associations, Inc.*

LABOR contracts exercise positive control upon the functions of management. They place restraints upon the authority of management to hire, fire, upgrade, and utilize the skills or abilities of employees governed by them. Because of their terms regarding working conditions, they control many of management's decisions which might otherwise bring about greater efficiency with resultant cost reductions.

Know Your Union

Every terminal manager must know the union which represents the employees under his supervision. He must keep abreast of intrigues within the locals. He must assess the relative strength of the shop stewards, business agents, and other local union officers and their relationship to the officials of the international. He must be able to determine whether the union representative is motivated by personal, membership, or even international desires — and

whether that individual may make any agreement with the manager stick.

Union leaders are elected officials. They must keep their ear tuned to the desires of their membership. When the manager knows that the local official is motivated by political consideration, or by a necessity for keeping face with his membership, he then is in a position to assess the union's impact upon his company.

Know Your Contract

Another area in which the manager has a responsibility is that of understanding the labor contract and its control upon his terminal's operations. Our staff, which has been studying the problem of grievance handling within the trucking industry, has found several sections in labor contracts which give management most of its headaches.

Editor's Note: Mr. Miller's remarks are excerpted from a paper presented at the recent Annual Meeting of The Operations Council, ATA, in Detroit, Mich.

Prevalent among recorded gripes is the handling of seniority. Time and again disputes arise where senior men claim they were displaced by younger men; where a question arises as to whether an extra man should be dispatched from an away-from-home terminal before a regular man; where a senior man claims he is entitled to available overtime; and even under a guaranteed work week where the available work on the Saturday or sixth day penalty day is claimed.

A number of these disputes never would arise if the supervisors were thoroughly familiar with the operational restrictions of the labor contract. Only by knowing the labor contract can the terminal manager arrive at a decision as to whether his dispatcher was right or wrong. Too many managers, who have found their dispatchers in error, have protected them by sending the grievance to a higher authority. In this they do their company a dis-service. The further a grievance gets from the point where it arises, the more costly an adverse decision may become, and the less likely it is for the company to make even a good case hold.

Discipline and Discharge

Another section of the contract which the terminal manager must understand, and about which he must have good judgment, is that of discipline and discharge. In such situations the manager must make certain that his decisions are based on a continuing company policy. Fluctuating company policies in such matters have been found untenable by grievance committees as well as arbitrators. With a continuing policy, penalties must fit the requirements, and any action taken must be timely. The alternative is that the manager's decision likely will be overruled, and the grievant will be reinstated—often with substantial back pay. Also, loss of a disciplinary decision may destroy the manager's status as a respected management representative.

What happens when the well-informed manager faces the type of union representative who al-

ways has an adverse reaction to management? This obviously means that his decision will be carried to the next step in the grievance process. Now he is faced with getting all the facts. He must not only prepare his case well, but have it fully documented in writing. His next step is to anticipate the union's position and to have his answers ready for each of their points. It is at this juncture where a number of managers get out on a limb. The records show one important fact may completely mitigate the situation.

Terminal managers should remember that all of the contract isn't in the signed document. It also includes all of the interpretations handed down since the day it was consummated. They too must be studied to clearly determine management's authority. The manager would do well to look at previous determinations upon grievances of a similar nature for clues to the treatment his case might receive.


Having accomplished these things, there is one more important thing for him to do. He should get professional advice. In most of the states the truck operators have a professional employed to help them administer the contracts. He should follow that man's advice. Above all, the manager should give that man all the facts, no matter how embarrassing they may be.

The Manager's Role

Since some 90 per cent of all grievances arising under the average labor contract are settled at the first step of the grievance process, the manager is an influential factor in good labor relations. The terminal manager, as far as management is concerned, is the first authoritative step in the process.

The terminal manager should be cautioned against agreeing, for expediency or peaceful relations with the local union representatives, to a demand that any section of the contract be revised in the unions favor. To do so is akin to renegotiating that contract without proper authority. If the contract in question is one negotiated by a multi-employer group, (Please Turn to Page 118)

C.F. Jan. '55



**If You Can Find the Solution to This
WHODUNIT
Everyone Will Benefit**

To Dock Foreman at: _____

This is a report of error discovered at our station: _____

Pro No. _____ Date of Pro. _____ 19. _____ Arrived on Equip. No. _____

Shipper _____ Origin _____

Consignee _____ Destination _____

The facts, and suggested correction (if any), are: _____

Signed: _____

Station _____ Date _____

The Positive Approach to Claims Prevention

**Solution of the error—not the offender—is sought
by use of new type form designed to reduce
claims; also mistakes made by freight handlers**

IN an effort to reduce claims, as well as mistakes and errors made by freight handling personnel, a new type report form recently was placed in use by Consolidated Freightways, Inc., Portland, Ore., as part of its service program.

The new form throws light on the error — poor bracing, sloppy stowing, not breaking down the load, failure to control temperature, and the like—rather than on the supposed perpetrator of the act, as was the case with the form previously employed in emphasizing handling mistakes.

In the past the discoverer of a boner was required to pick the responsible foreman and mail the accusation to him. Moreover, carbon copies of the report were directed to supervisors. The report form fell into disuse, and as a result

many errors never were reported and thus continued unchecked.

However, with the new form, entitled, "Whodunit," accusation is replaced by a challenge to search out and remedy improper stowing or instruct the uninformed handler. The form still is directed to the proper foreman, but, by its wording, the solution—not the offender—is sought. Recipients who find they are not involved merely send the form to the next person that possibly could provide the remedy.

Each notice travels its path scattering the word that the preventable error took place even if direct corrective action cannot always result.

Maximum and mutual benefit is extracted from each mistake as supervisors review their procedures.*

Ship Refueling at 1000 Tons an Hour

**Coal handling system refuels ships at the rate
of 1,000 tons an hour; provides high capacity
accurate weighting, and proper distribution**

THE coal dock of the Empire-Hanna Coal Division of the M. A. Hanna Co., which serves the Great Lakes traffic, is located strategically on the Detroit River at Windsor, Ontario, Canada.

The coal handling system in use at the dock can refuel lake vessels at the rate of 1,000 tons an hour from ample stocks of high-grade vessel coal.

In the past, lake vessels were refueled simply by spouting coal from two overhead bins. However, this was a slow process and the coal could not be weighted or placed accurately in the ships to maintain "trim."

The new coal-handling system provides high capacity, accurate

weighting, and proper distribution of the coal into the ships' bunkers.

Feeders draw coal from one or both of the existing 28-ton-capacity bins to belt conveyor No. 1. The feeders can be used singly or simultaneously, and the speed of each feeder can be varied accordingly.

The design of conveyor No. 1 permits the addition of two additional bins for increased live storage capacity. This conveyor is 48-in. wide, has 187-ft horizontal centers, and travels 460 ft a minute.

The coal is discharged to a retractable shuttle conveyor, which in turn delivers the coal into the

bunkers of the ship. This conveyor travels 55 ft along tracks on a 93-ft-long bridge. The conveyor can be extended to reach all parts of the coal bunkers of the largest ships, and can be withdrawn entirely when not in use, allowing the vessels to be trimmed properly while loading. Power for the conveyor is produced by a 50-hp motor connected to a helical gear unit and roller chain drive.

The framework of the shuttle supports three drives. A 1½-hp motor acting through a worm reducer, raises and lowers a retractable chute at the end of the conveyor. This chute confines the coal dust and permits discharge of the coal into the ship without the inconvenience of windblown fines about the deck.

Traversing machinery, driven by a 3-hp motor, operates the shuttle carriage at 20 ft a minute. The 48-in. belt is driven at a speed of 490 ft a minute by a 20-hp motor and helical gear unit.

Weighing Operation

A special weighing scale is located on the incline section of the conveyor about 20 ft from the discharge end. The weight of the coal passing over the conveyor at this point is transmitted automatically to the operator's cab over the shuttle belt, and recorded.

It is anticipated that the full efficiency and economy of the coal handling system will be realized when ocean-going ships start operating in the Great Lakes.

The Detroit River, the international boundary between the United States and Canada, is a vital artery of commerce between the ports on Lakes Superior, Michigan, and Huron, and the industrial cities on Lake Ontario and Lake Erie.

When the St. Lawrence Seaway is completed, it will be a connecting link between the highly industrialized Midwest and the sea.

Each year more than 30,000 lake vessels go through the river. Annual southbound traffic consisted of over 82 million tons of grain, iron ore, and automobiles, while northbound vessels carry over 32 million tons of coal, paper, and numerous other products.*



The Tote-Container . . .

(Continued from Page 44)

duced an all-in-one railroad car which can be converted from container car, to piggy-back car, to flat car.

Perhaps the most striking example of containerization in the aircraft industry is Fairchild's flying boxcar. This huge pod-carrying aircraft has been used extensively by the military for transporting supplies. Piasecki also is experimenting with a helicopter designed on the same principle.

Last year Clark Equipment Co. introduced its Mobilvan, a large, light-weight steel container with a locking mechanism for securing it to flat car or trailer bed. Early this year the first three such containers, built by Fruehauf, left Chicago for New York under an arrangement between Spector Freight Systems, Inc., and the Pennsylvania Railroad.

Ocean Shipping

Containerization, long a standard system in the maritime industry, is gaining impetus in that field through the development of a container ship. Special handling gear eliminates the problem of moving the container from the hatch square to the wings or end of the holds.

In addition, at least four firms have been granted authority to construct roll-on-roll-off ships for the water transportation of loaded trailers. Private firms have been shipping goods between the Pacific Northwest and Alaska via containerization for several years. More recently operating rights have been granted for similar operations in coastal and inter-coastal trade.

Several months ago Grace Line, Inc., and Libby's Foods conducted a successful experiment involving containerization. A commercial shipment of frozen foods—some 6,000 lb of fruit, vegetables, and juices—was shipped from New York to Venezuela without using any form of mechanical refrigeration.

The frozen foods were placed in

an aluminum container manufactured by Alcoa and stowed on deck for the 10-day voyage. The use of a cooling agent, reducing the foods to an extremely low temperature when they were placed in the box, was credited with the success of the experiment.

Two factors are making containerization an important element in the transportation and warehousing of household goods. Several firms have developed and many individual warehousemen are using the so-called pallet-vault method of storing and shipping household effects.

In the pallet-vault system a pallet load of low-density household items is enclosed by boxboard panels, making a compact unit load suited to fork or pallet truck handling. The vault is particularly valuable in household goods warehousing, because it permits tiering of odd shaped, hard to stack items.

With many household goods carriers being granted overseas operating rights, the standard tote container is being used more extensively for the shipment of household effects to foreign countries. The containers are valuable in this field for their protective, pilferproof, and ease-of-handling qualities.



"Can't you teach your men that 'everything in sight' doesn't include assistant traffic managers."

Bulk Handling

The movement of bulk materials has provided containerization one of its most effective areas of operation. The principal advantages appear to be the ease of handling and flexibility provided by tote containers in this field.

The containers are used for transportation of the raw material from source to producer, interplant transportation, interim storage and, where the processed material remains in bulk form, for delivery to the user.

Typical of these containers is a unit manufactured by Tote Systems, Inc. The standard bin consists of a 42-x48-in. case, mounted on 4½-in. legs, and having an overall height of 5 ft. These dimensions permit side-by-side stacking on rail cars and trailers, and tiering in storage space where air rights are available.

Used in conjunction with a tilting mechanism, the bin becomes a 45-deg discharge hopper, expelling its contents by gravity or screw conveyor.

Wide Application

The use of tote containers as described in this article is only a small sampling of their application in modern industry. The containers are being used with varying degrees of success in the food, drug, textile, mining, metal working, automotive, retail merchandising, printing, machinery, rubber, and plastics fields—as well as countless other industries.

The carrier industry itself has been a pioneering agent in the development of the containerization principle. Most of the major railroads have been using one form or another of containerization for many years. The same holds true for other forms of surface transportation.

This trend can be traced to the growing realization that tote containers make excellent companion tools to modern handling equipment. As more and more shippers and carriers make this discovery, we can expect even more widespread use of the versatile unit container. *

(Resume Reading on Page 45)

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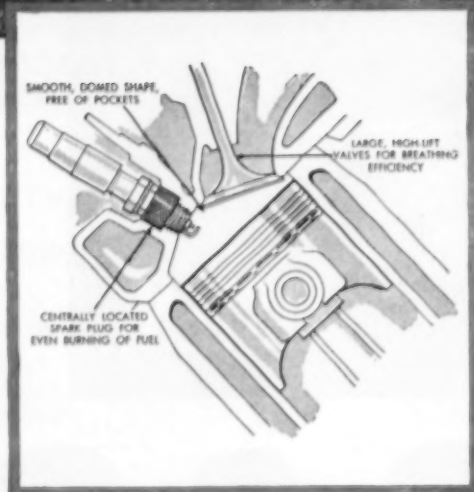
Low maintenance. You get thousands of added miles of like-new engine performance because combustion chambers have no "pockets" to accumulate carbon.

Greater gas economy. Short-stroke Power-Dome V-8 engines deliver full power on regular gas, give you more miles per gallon.

Shortest turning radius. Gear-before-axle steering makes turning easier, saves time.

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Add it all up, and add in the fact that Dodge trucks are priced right down with the lowest. You get more truck for your money—and any Dodge dealer can prove it to you!



Only Dodge offers Power-Dome V-8 design. This dome-shaped combustion chamber burns fuel more efficiently; saves gas, maintenance.

GET YOUR DODGE DEALER'S DEAL BEFORE YOU DECIDE

DODGE TRUCKS

WITH THE
FORWARD LOOK



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DISTRIBUTION AGE



Cut truck costs . . . by cutting the cost of moving the truck!

It's a fact—the biggest savings are *not* in the price you pay for a truck. The real opportunity to save money is in the *cost of moving* the truck!

For example, if you pay \$100 for a truck and amortize it over ten years, it has cost you \$10 a year to buy that truck. If you buy it for half that price it has cost you \$5 a year.

Now ask yourself: How much does it cost to move that truck? Probably \$3000-\$4000 a year, based on \$1.50 per man-hour plus overhead. If you can save as little as 5% of that cost through increased efficiency, you will save \$200 per man, per year, every year! Magcoa/Tobey truck users are doing just that! It would pay you to buy the *most efficient* truck, not just the cheapest.

Magcoa/Tobey lightweight aluminum trucks are the easiest-to-push, most maneuverable trucks available. They eliminate cumbersome dead weight. The worker moving a light weight aluminum truck gets a quicker, easier start. He'll move and steer the Magcoa/Tobey truck with greater ease and safety. At his destination, he will stop the truck in less time and space and with less effort. He'll make more trips in less time too—with less fatigue.

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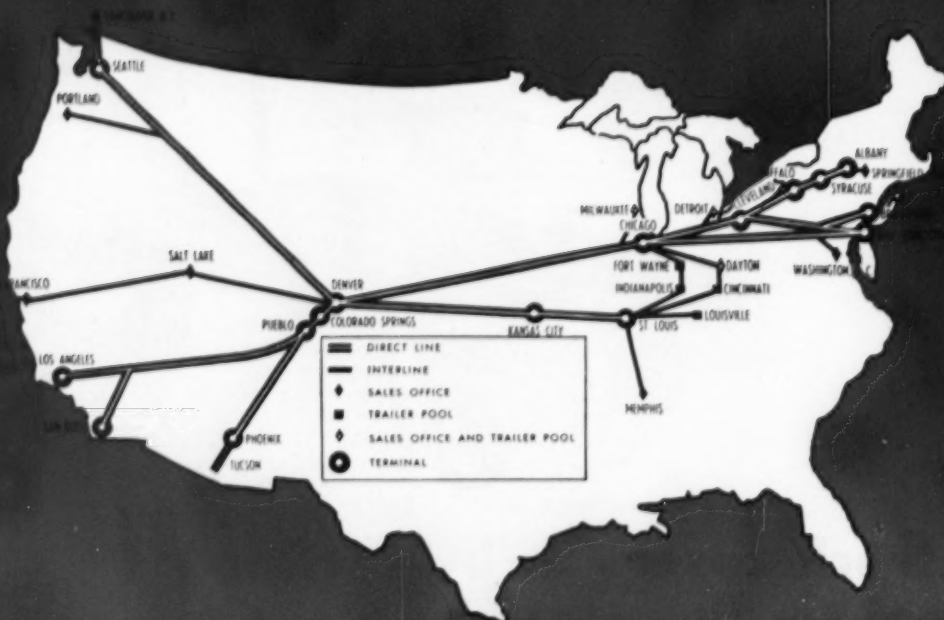
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5. Self-Loading Systems

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DA Materials Handling Consultant

SKIDS AND SKID JACKS

MODERN HANDLING COMBINES TWO BASIC ELEMENTS

We are correct in describing the handling techniques we are about to discuss as being modern. But in the sense that they are the last word in their particular fields all handling methods that have advanced—and all have—are “modern.” However, it has become common practice among those who work with handling methods and equipment to apply the adjective to skid- and pallet-handling techniques as though they were the exclusive property right of these methods. Perhaps there is some justification for this attitude.

Piece-by-piece manual handling had been the accepted procedure for moving products since earliest times. Man had developed some machines which incorporated such elements as the lever, the inclined plane, the wheel and the pulley; however, even after these machines were combined and powered (which became possible with developments in the practical use of electricity) many handling operations still were performed manually.

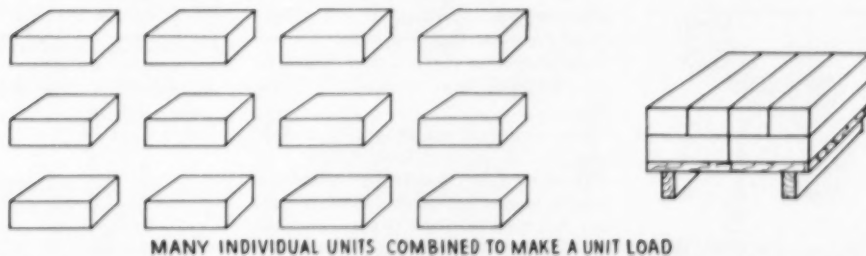
Meanwhile, rapid advances were made in manufacturing methods. Fabricating processes became highly developed

and mass production changed our thinking about how products could be turned out in multiple quantities at lowered costs.

During the era of industrial advances, handling methods made little or no progress. Then, within a relatively short period of time, the picture changed completely. Two basic conceptions were combined. Together they made possible the economical handling of materials on skids and, later, on pallets. These two ideas found concrete expression in the unit load and in self-loading machines.

Before describing the unit load and the self-loading systems, we should inject a word of caution. The spectacular rise of these handling methods has given the impression to many that they are the answers to all handling problems. They have had revolutionary effects on some phases of handling, but there are still situations where other handling methods are highly efficient. Only by careful study of all factors involved can one say that any particular kind of handling method is the one best suited for a given set of conditions.

THE FIRST BASIC ELEMENT—THE UNIT LOAD



It has long been recognized that it is easier to handle materials if a number of small units are contained into a single package. Peas in a can are combined into a useful single unit, but several cans of peas packed in a carton make an even more effective handling unit.

The development of shipping containers has, to some extent, been restricted in size to the weight that can be moved safely by one, or at most, by two men. An individual is able to manipulate a container of reasonable proportions which weighs about 80 lb. Cases of eggs, crates of fruit, bags and sacks of flour, seeds, etc. have been worked out with the one-man-handling limitation in mind. To be sure, barrels, drums and similar containers cannot be lifted by one worker, but these can be rolled on their bilges and, in those industries where such containers are used extensively, special trucks and other de-

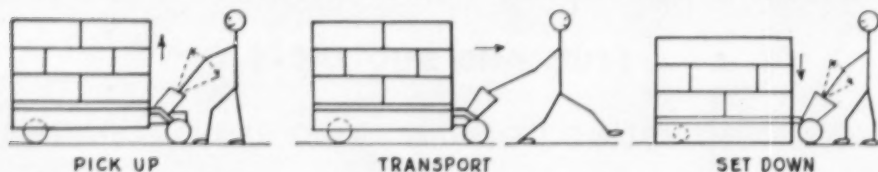
vices have been developed which facilitate their handling by an individual.

The idea of handling combinations of several shipping containers at one time has been used wherever floor trucks are utilized for hauling a number of different articles. Although the transportation phase of the handling cycle was quite efficient, especially after the vehicles were motorized, the weakness in handling lay in the way each individual item was manipulated at the beginning and the end of the trips.

The first element that changed this method of handling was the conception of the unit load. As we learned in an earlier installment (DA, Jan., 1956, p. 60) a unit load is a group of items so assembled, strapped or glued together that they can be handled as a unit by self-loading mechanical equipment.

EDITOR'S NOTE: This series of copyrighted articles is being excerpted from a forthcoming book by the author. The editors of DISTRIBUTION AGE gratefully acknowledge the privilege of exclusive prepublication magazine rights.

THE SECOND BASIC ELEMENT—SELF-LOADING EQUIPMENT



The machines that make possible the handling of unit loads have three characteristic features. They can pick up, transport and set down unit loads without manual or other external mechanical assistance.

The skid was the first carrier developed for accumulating and supporting the elements of a unit load. The paper industry quickly adopted and took full advantage of skid handling.

During the second decade of this century, the shipping and handling of skidded paper stock became the accepted practice.

A few years later—1929 is the usually recognized year—another advance was made in unit-load handling. It was then that the pallet and the fork truck were evolved.

The important contribution made by the pallet was that loads on this

type of carrier could be tiered one above the other. It was the double-deck construction of the pallet in combination with the fork-lift truck that made this possible. A new dimension had been added to unit load handling.

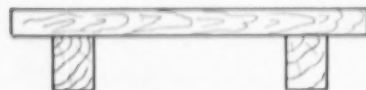
And now, still another phase has been reached. Every effort is being made to develop unit loads that can be handled without any skid or pallet.

THE DISTINCTION BETWEEN SKIDS AND PALLETS IS A FINE ONE

The prototypes of present-day skids and pallets were characteristically distinctive. The first skids had a single platform mounted on two parallel members called runners. Such skids still have the appearance of a child's sled. In contrast, the earliest pallets had two platforms separated by three stringers.

Gradually the distinctions have broken down so that today we have single-faced pallets.

The best way to differentiate between the two types of carriers is to say that skids are handled by equipment elevating device of which is a platform; pallets are handled by machines equipped with arms or forks.



FRONT VIEW OF A SKID



PLAN VIEW OF A SKID PLATFORM

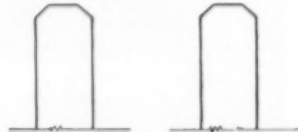
The two accompanying sketches are intended to bring out the differences between the two kinds of carriers, based on the characteristics of the machine that normally handle them.

The sketches are of purely representative carriers and machines.

It should be noted that platform trucks cannot be used to handle pallets, but that fork-lift trucks can handle both pallets and skids.

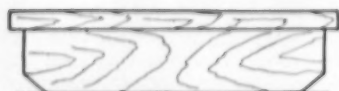


FRONT VIEW OF A PALLET

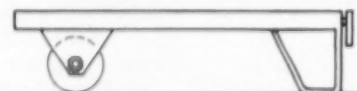


PLAN VIEW OF PALLET FORKS

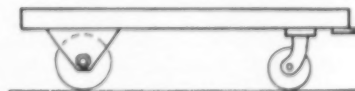
THREE TYPES OF SKIDS



A WOODEN DEAD SKID



A SEMI-LIVE SKID



A LIVE SKID

Skids are constructed in three different ways, resulting in three types—dead, semi-live and live.

Dead skids have a solid platform or deck which is supported by two runners, or by two sets of legs similar to those shown at the front end of the semi-live skid.

Semi-live skids also have a solid platform, but in this case it is supported at the rear end by two rigid casters and at the front end by a pair of fixed legs.

Attached to the front end of these skids is a device or latch which engages a lift jack. This is a tool equipped with a pair of wheels and a handle. When the jack is positioned

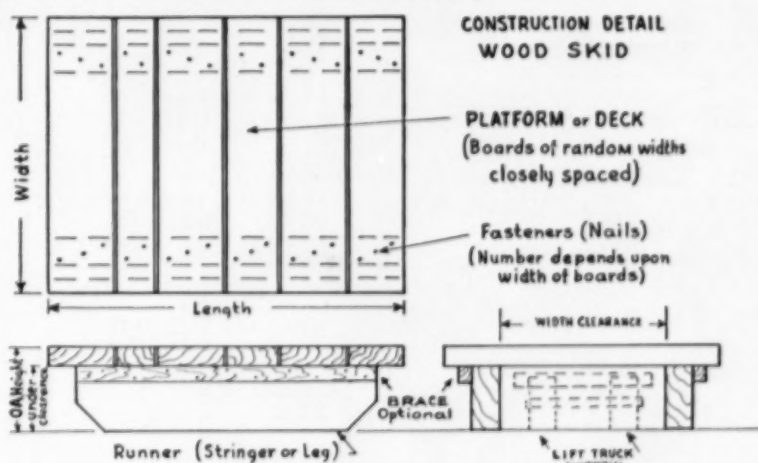
under the latch of the skid, the handle is lowered and leverage action causes the jack to lift the skid slightly. The wheels of the jack take over the weight of the load from the front legs. The skid now has three-point suspension on live running gear and can, therefore, be moved by pushing or pulling on the handle. The skid jack is a rudimentary type of self-loading machine.

Live skids have a platform which is supported by live running gear—usually two rigid and two swivel casters. Sometimes four swivel casters are used but, as with all such equipment, this type is difficult to steer.

DIFFERENT VARIETIES OF DEAD SKIDS

The one-way-shipper type of wooden skid is the most inexpensive kind from the standpoint of initial cost. It usually is constructed lightly and rarely survives more than one trip.

The sketch showing the construction details of a wooden skid can be utilized to point out the critical dimensions of skids in general. The important specifications are those of the opening where the skid-handling equipment enters the carrier. The vertical under-clearance must be such that when the machine is lowered, it enters freely and when it rises will lift the runners or legs clear of the ground. The width of the opening must be sufficient to admit the machine without too careful positioning.



STURDIER CONSTRUCTIONS AND SUPERSTRUCTURES

When skids are to be used for day-in-and-day-out handling operations they must be more rugged than the all-wood type described above. The most satisfactory kind of wooden platform skid is steel-bound (arc-welded) with the top boards and legs bolted in place. When so constructed, the boards can be replaced easily when necessary.

The hardwood platform serves as the base for innumerable kinds of superstructures, similar to those used with floor trucks. A few samples are shown.

The box top type fits over the platform. These frames can be nested one above the other to form a solid box carrier of any required depth.

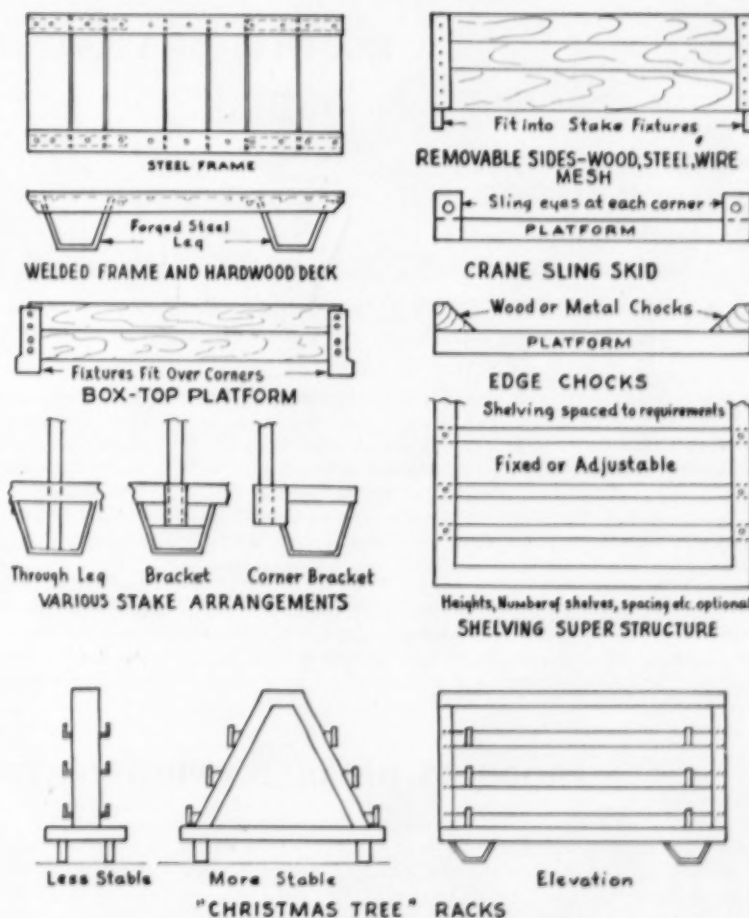
Removable stakes are used to hold long objects—rods, lumber, fabricated steel, etc. Chocks are used to hold shorter articles in place, such as cylinders of gas, shells, etc.

Sides of wood, metal or wire mesh that are fixed or removable also are available.

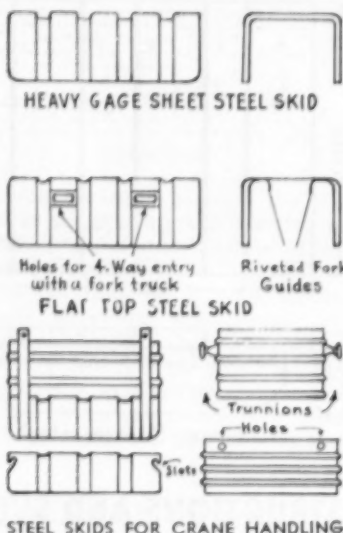
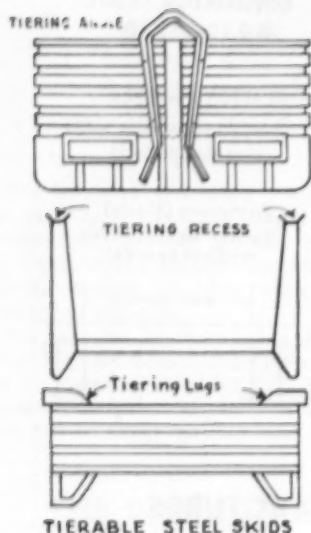
Quite frequently, skid-handling is combined with crane operations. Lugs facilitate the attaching of hooks and chains for this purpose.

Fixed or adjustable shelving on skids makes a convenient set-up for distributing small parts, stock, etc.

Printers rollers, textile beams and other long objects that do not pile well are handled effectively on "Christmas trees." The arrangement also facilitates selecting a particular item from a group.



FABRICATED METAL SKIDS ARE MORE RUGGED



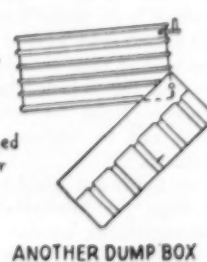
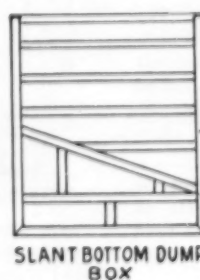
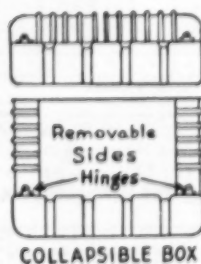
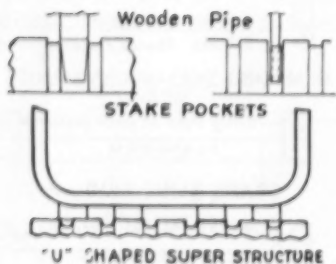
Although steel-bound wooden skids have capacities as great as 10,000-lb loads, those fabricated from heavy gauge sheet steel support almost any weight within reason.

The primary advantage of steel skids is their ability to stand up under rough service. In addition, they seldom require repairing, so that they have relatively longer active lives. They are cleaned easily and are both vermin- and fire-proof. However, their first cost is greater than for wooden pallets.

Some of the many stock superstructures for steel skids are shown here.

It is interesting to note that it is quite usual to properly space the legs and to provide openings in the one-piece type of metal skid to permit the use of forks from either the ends or the sides of the carrier.

EXAMPLES OF VERSATILITY



Every manufacturer of steel skids has a wide selection of standard superstructures among which the prospective user generally can find one to meet his needs. If not, either the skid manufacturer or a steel fabricator will design and produce one according to given specifications. These made-to-order skids are more expensive than those produced on a large-scale basis, but the additional investment often can be justified because of the handling economies they effect.

It was mentioned earlier that the pallet and fork truck method of handling permitted the tiering of unit loads one above the other. This should not be interpreted as meaning that skid loads cannot be tiered. They can be and are so handled. Several examples of self-tiering skids have

been shown on the previous page. It also is quite common to use dunnage as bearing surfaces for runners where the upper surface of the unit load will be damaged by the relatively narrow runners or the legs. In some instances, however, this precaution is not necessary, as when the top surface is sufficiently firm to withstand the pressure from above.

The advance in the technique of tiering unit loads which was introduced by the pallet and fork truck method is due to the double-deck feature of the carrier. The pallet provides its own dunnage and, since a pallet has considerably less height than a skid, it is possible to store more palletized material in a given space than is possible if skids are used.

PRODUCTS HANDLED AND OPERATING FUNCTIONS

Given a properly designed superstructure, there is practically no limit—except the size and weight capacities of the carriers and machines—to the kinds of products which can be handled on skids.

In many instances, the skid itself

does not support the load directly. It serves as a device to permit moving by means of self-loading machines. Therefore, the materials they can handle are not restricted to articles which can be made up into unit loads. Loose materials also can be transport-

ed in containers designed for use with platform equipment.

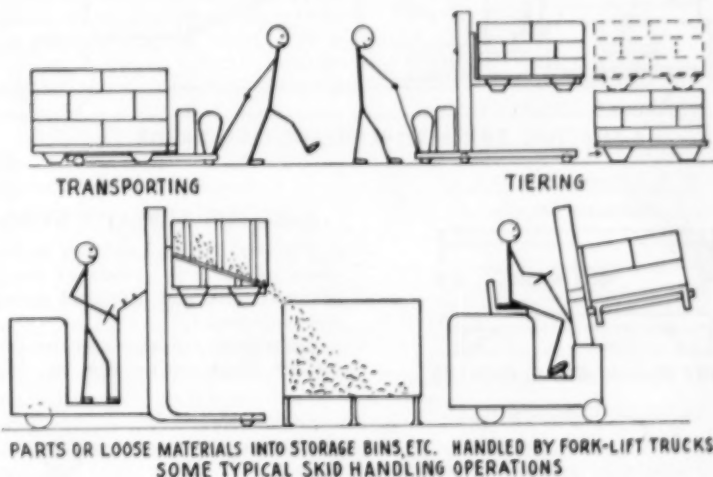
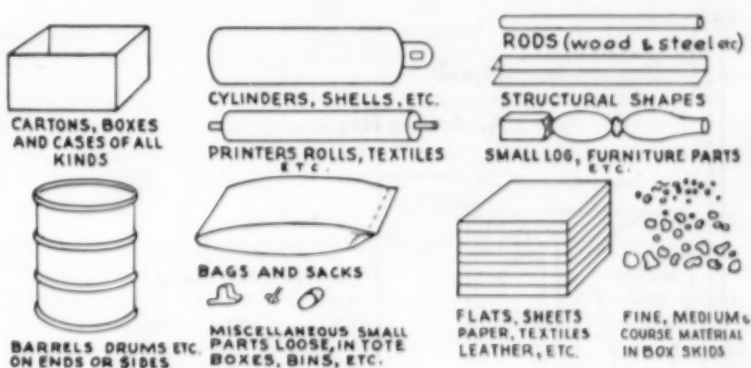
How articles are combined to make up unit loads and the various patterns in which they are arranged were described in a previous installment (DA, Jan., 1956, p. 60).

OPERATING FUNCTIONS

It has been pointed out previously that, in addition to the three operations of picking up, transporting and setting down, tying also can be accomplished by high-lift skid equipment.

The machines used to transport and elevate skids were described in earlier issues (see DA, May, 1956, pp. 63-103, and June, 1956, pp. 78-81.) Described and illustrated were low-lift platform and fork trucks and high-lift skid and pallet trucks. Also included in the May issue were complete specifications on 895 basic models of industrial trucks.

As a general rule, the length of a skid is greater than its width. Although this throws the center of gravity forward, elevating machines designed for handling skids have at all times a ground-bearing support under the load so that there is no need for counter-balancing. Those fork trucks which are cantilever-constructed have no such support under the load, so that these machines usually handle skids from the side in order to keep the center of gravity of the load as close to the heels of the forks as possible.

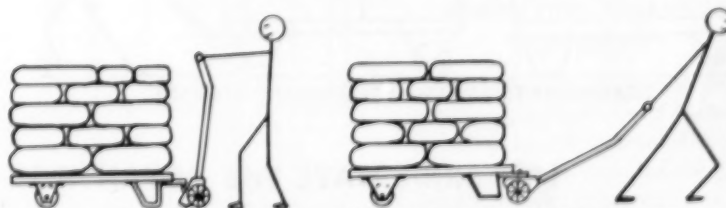


SEMI-LIVE SKIDS AND THEIR HANDLING DEVICES

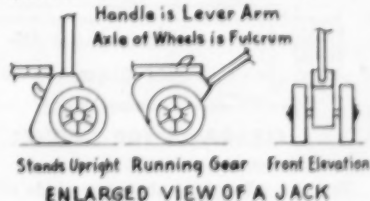
SEMI-LIVE SKIDS

Semi-live skids are steel-bound constructed. They are quite similar to dead skids of that general type except that instead of having four they have two legs and a latch at the front end for engaging a jack. At the rear end they have two live casters.

The casters may be metal, rubber or composition to fit the surfaces over which they are to operate. The more efficient types have friction bearings with pressure lubrication fittings. Like all such running gear, the larger the diameter of the wheels, the easier they are to haul.



front end slightly lower than the rear so that when the front end is raised by the jack (about an inch) the platform will be level. The dual wheels are offered with a variety of choices of tires.



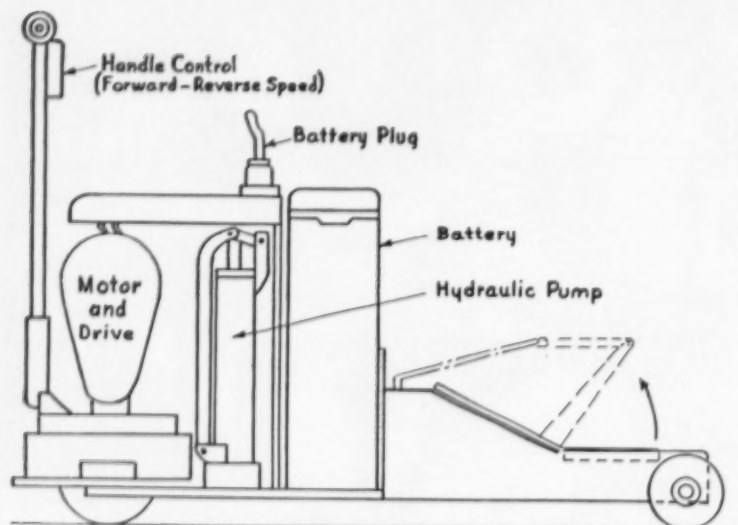
SKID HAND JACKS

There are many makes of jacks for handling semi-live skids. It is usual to purchase skids from the same source. These special skids have the

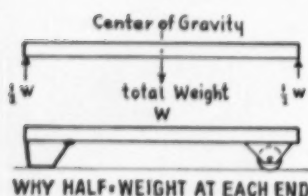
DESIRABLE FEATURES

It is most important that the jack selected be so designed that it will "stay put" under the skid and not snap out. It is also advantageous if

it can stand alone. Another desirable feature is that it can be swung through a wide arc across the front of the skid.



A TRACTOR FOR SEMI-LIVE AND LIVE SKIDS



WHY HALF-WEIGHT AT EACH END

JOB FOR SEMI-LIVE SKIDS

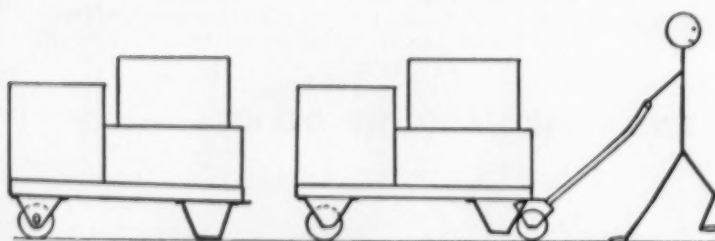
The semi-live skid and jack make a complete handling system as far as transportation and floor-level storage are concerned.

These jacks are less expensive than low-lift hand trucks such as those

POWERED JACKS

Within the last few years several small electric shop tractors have been developed. They have turned out to be useful as powered jacks for semi-live and live skids. Although more expensive than hand jacks, powered tractors can lift and move heavier loads than the former. One model, for example, can lift 4,000 lb and has a draw-bar pull of 10,000 lb. Since the weight on the front end which must be lifted is approximately half that of the total load, the powered jack can handle somewhere between 8,000 and 10,000 lb on a skid.

used with dead skids. Because of their casters, semi-live skids are more costly per unit than the dead varieties. On the other hand, semi-live skids are less expensive carriers for temporary storage than platform trucks with full running gear.

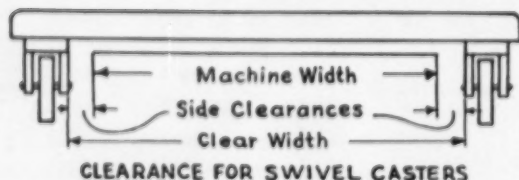


TRANSPORT TO AND FROM TEMPORARY STORAGE

LOAD WEIGHT DISTRIBUTION

When a semi-live skid is uniformly loaded it acts like a small bridge support at both ends. The weight is concentrated at the center of gravity — in this case, the center of the load. For all practical purposes, the weight is considered to be equally distributed between the front legs and the rear wheels.

LIVE SKIDS HAVE THE ADVANTAGE OF MOBILITY



CLEARANCE FOR SWIVEL CASTERS

The one advantage that live skids offer over the other two types is their mobility. Actually, there is little difference between them and a low four-wheel platform truck or a dolly. There is practically nothing to be gained by the use of a low-lift truck to provide running gear when the skid itself is fully equipped with casters. Since the wheels of the handling truck cannot be larger than the

wheels of the skid itself (they must fit under the skid), there is no advantage from the standpoint of handling by this method.

The situation is somewhat different where powered low-lift trucks are employed. One such unit can serve a number of live skids so that there is an economy in such a setup. However, in actual practice, live skids are used only when there is an advantage to be gained from being able to shift them about in restricted areas without the use of power.

The distance between swivel casters is an important dimension. The closer the fit between the casters and the platform of the machine, the more carefully must the casters be lined up to permit entry of the platform. Such niceties are time-consuming and interfere with the smooth running of the operation.

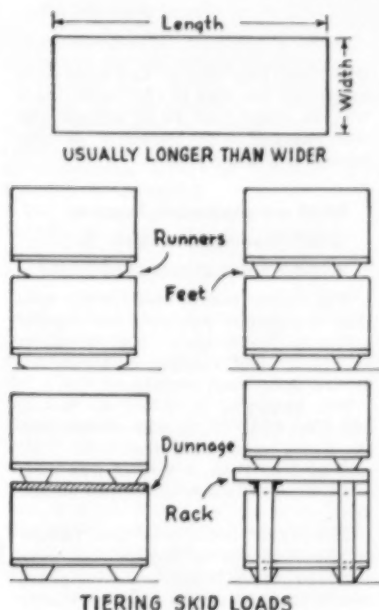
The running gear can be any four-wheel arrangement. Six wheels can be used if required. The type of wheel is usually optional.

Any of the custom superstructures can be provided or special ones developed for unusual needs. Where end racks are used, the skid is usually manipulated by pushing or pulling the rack. In other instances a long hand grip with

a hook at one end to engage an eye at the front end of the skid is another means of handling. No purpose is gained by the use of a hand skid jack, but a powered jack is effective for long hauls or for heavy loads.

In practice, live skids are the most infrequently used type. They are the exception rather than the rule in skid equipment.

THE DIFFERENT TYPES OF SKIDS COMPARED



USING AIR RIGHTS

By way of summarizing this discussion, it is pointed out that skidded loads can be tiered one above the other, provided certain conditions exist. For instance, the character of the load must be such that no damage will result from the pressure of the superimposed runners or feet of the upper skids. The situation can be corrected, if there is danger of damage, by the use of wooden strips, plaster board, etc. as dunnage. However, the practice of inserting extra pieces slows up the tiering operation.

It always is possible to tier skidded loads by means of self-supporting skids or by employing racks. Although these methods necessitate investment in extra equipment, the savings resulting from the better use of cubic space frequently justify the outlay.

WHAT PRICE STORAGE

One of the most popular use of skids is for temporary storage without tiering. This is an economical prac-

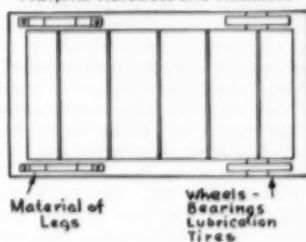
DIMENSIONS: All wooden and steel-bound dead skids can be secured in any size desired, but semi-live skids usually are offered in standard widths and lengths. For instance, one manufacturer lists fifteen sizes ranging from 24 x 36 in. to 36 x 72 in. Since the length usually is greater than the width, skids can operate in relatively narrow aisles.

MEANS OF HANDLING: All types can be moved by low-lift platform trucks or by fork equipment.

The use of jacks is restricted to semi-live skids. The powered tractor is employed with both semi-live and live skids.

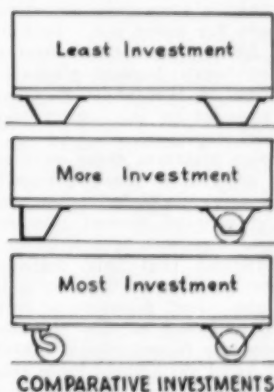
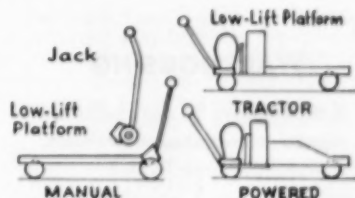
For elevating, as in tiering, high-lift platform or fork trucks are used. There is a wide variety of such machines which include stackers as well as more mobile equipment. The construction and operation of stackers are covered in another section of this series.

Frame - How Constructed Platform-Hardwood and Thickness



POINTS TO CHECK WHEN PURCHASING SKIDS

tice when the turnover of the stored materials is fairly rapid. Unless this condition holds, the savings from not having to "break bulk" will be offset by the carrying charges of the equipment on which the material is standing idle. This is especially so if the more elaborate types of carriers are used. Equipment with wheels is intended to be moved actively. Dead skids, all things considered, make the most economical type of storage carrier among the members of the skid family.



Materials Handling Equipment

This series of copyrighted articles is being excerpted from a forthcoming book by the author. The 560-page volume is expected off press this September.

Illustrated with more than 2,500 line drawings, the book depicts the mechanical principles underlying tools and machinery used in the science of materials handling.

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By Leo T. Parker Legal Consultant, Distribution Age

WAREHOUSING

If an employee of contractor is injured on warehouse premises, is warehouseman liable?

Sometime ago I stated in these pages that in some cases warehousemen have for many years paid premiums for state industrial insurance and yet heavy damage allowances, amounting to thousands of dollars, were awarded by the higher courts to injured employees.

In some instances these payments are in addition to the compensation allowed under the State Compensation Laws. I received several comments from warehousemen who apparently are surprised that this statement could be true. I am now collecting new higher court decisions to verify the authenticity of this statement and soon in a future issue of DISTRIBUTION AGE I shall digest these cases. At present, however, I shall review new cases which clearly illustrate what readers can do to prepare to win future law suits.

The late case of *B— v. R—*, 282 Pac. (2d) 69, is important and answers a question often presented to me by readers, as follows: "If a contractor is doing work on warehouse premises and his employee is injured, is the warehouseman liable in damages for the injury if the testimony shows that the contractor has insurance under the State Workmen's Compensation Act?"

According to this new decision the answer is yes, if the injury resulted from negligence of the warehouseman to provide safe working conditions for the contractor's employees.

In this case an employee, named *B—*, of the contractor came in contact with a three-wire power line carrying 33,000 volts for use by the corporation for which the contractor was doing work. *B—* was severely burned. In holding the corporation liable to *B—* for \$100,000 damages, the higher court said:

"It was the duty of the defendant (corporation) to use ordinary care to furnish plaintiff (*B—*) with a safe place to work. The general rule

is that an owner of premises who permits a workman to come on the premises for the performance of work for the benefit of the owner, is required to use ordinary care to supply him with a reasonably safe place in which to work, and to warn him of any existing danger which he knew or, in the exercise of ordinary care, should have known."

Since the contractor carried insurance under the State Workmen's Compensation Act, *B—* also received compensation from the state for his injuries.

Can a warehouse employee injured by carelessly stacked merchandise, collect damages?

Generally speaking, the courts will not award damages to an employee in a warehouse who was injured by stock or merchandise which he stacked in a dangerous location. However, last month a higher court rendered an important decision to the effect that unless a warehouseman employs someone, either a regular or other employee, to systematically replace displayed or disarranged stock, the warehouseman is liable in damages for injuries sustained by an employee caused by falling or dislocation of such stock or merchandise.

For example, in *W— v. P—*, 222 Fed. (2d) 121, the testimony showed facts that one *W—* was employed to handle linoleum rugs and other merchandise. One day he was severely injured when struck by rolls of linoleum which fell upon him.

In subsequent litigation, the testimony showed that the employer had not in the past designated an employee who must replace the rugs properly in their racks. Therefore, the higher court held the employer liable for the injuries sustained by *W—*, and said:

"We conclude that the dealer had a duty of care resulting from his knowledge of the general practice of customers leaving the rugs out of their racks, and breached this duty by failing to provide a regular and systematic method of restoring them. In the present case, although there

was proof that *W—* had some duty to replace the rugs in the racks, there was no proof that he or anyone else was charged with regularly or systematically doing this."

Must warehouse employees inspect premises regularly to eliminate dangerous conditions?

The higher courts consistently hold that warehouse employees are legally obligated to inspect the premises regularly, and thereby eliminate all known dangerous conditions.

For example, in *L— v. R—*, 263 Pac. (2d) 13, it was shown that the floors were cleaned at 7:30 A.M. and at 3:30 P.M., a visitor was seriously injured, when he slipped on the floor.

The higher court held that failure of the employees to inspect and clean the floor for 8 hours was negligence which resulted in the injured visitor being entitled to recover damages. The higher court said:

In case at bar, the evidence showed the premises had not been inspected in eight hours."

For comparison, see *T— v. M—*, 205 Pac. (2d) 475. This court indicated that whether a defective or dangerous condition existed on the premises long enough for a reasonably prudent employee to have discovered the peril, is a question for a jury. Also, for further discussion of the law on this subject see *H— v. L—*, Estate, 103 Cal. App. (2d) 143; *V— v. M—*, 213 Pac. (2d) 417, 419; and *McK— v. P—*, 156 Pac. (2d) 950.

Is sale, by auction of stored goods to secure overdue payment, valid with two or three bidders?

During the past the writer has received quite a few inquiries from warehousemen and officials of warehouse companies regarding the validity of a sale by auction of stored merchandise, to secure overdue payment, when only two or three bidders are present.

Recently a higher court decision

answered this question. See *B— v. P—*, 278 S. W. (2d) 266. Here the testimony showed that only three persons or bidders attended the auction sale. The higher court held the sale to the highest bidder to be lawful, saying:

"Upon the issue of whether the appellee (Partner) conducted a fair sale . . . The evidence is wholly uncontroverted that there were three bidders who appeared at the time and place of the sale."

Must a warehouseman intending to sell stored goods comply with all state laws?

Irrespective of whether a warehouseman intends selling stored goods to secure his lawful charges, or whether he contemplates foreclosing a lien, mortgage or conditional contract, he must strictly comply with all state laws, otherwise the sale or foreclosure is invalid.

For illustration in *C— v. F—*, 127 N. E. (2d) 172, the testimony showed that a law, known as 13A, of the State of Massachusetts, provides that a conditional sale contract shall not be valid unless it contains a clause that in case of repossession of the merchandise any sum remaining from the proceeds of a sale, after deducting the reasonable expenses of such repossession and sale shall be paid to the purchaser.

One day the *C— & W— Automobile Co.*, an automobile dealer, sold to a purchaser certain merchandise under a conditional sale contract which contained the above mentioned clause required by the State Statute. Also, the contract contained another clause not authorized by law to the effect that the buyer would pay the dealer all reasonable charges for the amount of any liens, storage charges, repossession expenses, reasonable attorney's fee and all other reasonable expenses incurred or paid by the dealer.

In subsequent litigation, the higher court held that the dealer could not repossess the merchandise from the purchaser, who defaulted, because the conditional sale contract was rendered void since it contained the clause not authorized by the state law, that the amount of liens, storage charges, repossession expenses, reasonable attorney's fee or any other reasonable expenses in connection with foreclosure might be deducted from any surplus payable to the buyer. The court said:

"We hold that the contract did not satisfy the requirements of 13A (state law) and that the plaintiff (dealer) lost its security title."

A policy holder's best protection is knowledge of the exact language of the policy.

Every policy holder should care-

fully read his insurance policy and know the afforded protection.

In *H— v. S—*, 251 S.W. (2d) 115, the higher court held an insurance policy void where the insured stated that he was the sole owner of the motor truck and another person has some interest in it.

In *H— v. W—*, 165 S.E. 839, the higher court refused to pay a fire loss where the testimony showed that the insured company increased the hazard, and stored inflammable materials in the building.

In *S—*, 237 N.Y.S. 120, the higher court held that a fire insurance policy is rendered void where the policy holder does anything to increase the hazard of fire. Also, see *M—*, 39 Fed. (2d) 25, where the higher court held an insurance policy voided by the insured storing gasoline and alcohol on the premises.

In *W— v. W—*, 192 N.E. 497, the higher court held that an insurance policy was rendered void and the insurance company need not pay the loss where the testimony showed that the motor vehicle owner delayed two months in reporting an accident to the insurance company. Also, see *S— v. F—*, 114 Ohio St. 633. This court held that if an insured fails to give the insurance company immediate notice of an automobile accident, the insurance company is relieved from all liability under the policy.

In *H— v. A—*, 249 S.W. (2d) 669, the higher court held an automobile insurance policy void where a transportation company's official falsely stated in the application for the insurance that the company had not had an insurance policy cancelled during the past two years.

In *S— Co. v. M— Insurance Co.*, 44 N.E. (2d) 944, it was shown that a transportation corporation held an insurance policy which indemnified the corporation against loss up to \$5,000 on account of bodily injury suffered by any person "by reason of the use, ownership, or maintenance" of the truck.



"Let's just call it the happy culmination of 30 years of frustration."

While the truck was standing still a person was injured. The higher court held that the insurance policy was limited and did not cover this accident. The lesson of this litigation also is: Be sure to read your insurance policy to know that it gives the protection you think it affords.

TRANSPORTATION

Is carrier liable for failure to "collect" charges on delivery of merchandise?

The higher courts hold that a common carrier may be liable for failure to comply with a shipper's order to "collect" charges on delivery of merchandise to the consignee.

For illustration, if a common carrier's agent accepts payment for cod shipment the carrier is legally bound to remit the collected payment to the shipper, consignor. In a case, for example, a consignee paid cod with his personal check. The carrier endorsed this check without recourse and mailed it to the shipper. The consignee failed to pay the check. The shipper then sued the carrier for payment of the amount of the check on the grounds that it was negligent when it accepted the consignee's check, instead of cash.

In subsequent litigation the higher court held that the carrier must assume full liability for payment to the shipper.

Also, see *M— v. L—*, 221 N.Y.S. 391. Here a carrier was held liable for accepting a worthless check in payment for cod charges, where the testimony showed that the consignor refused to accept the check from the carrier and immediately returned it to the carrier, asking for payment in cash. This court held that a carrier must collect cash for cod charges and it is fully responsible if it accepts any other payment. The court said:

"The carrier of goods transported cod is obliged to collect the money from the consignee on or before delivery of the goods to him. . . . A shipment cod of goods contemplates that the carrier will collect the amount specified in cash, and, if a check is accepted in lieu thereof, it is done at the peril of the carrier."

The legal basis for this law is that unless credit is specifically agreed upon, cash payment always is implied. Thus, where a carrier performs any service the law presumes cash payment, unless the shipper agrees in advance to extend credit. The same law is applicable to all other contracts. If a contract does not contain a clause to the effect that a sale is being made on a credit basis, the court will imply that the contract contains a clause that the purchaser will pay cash.



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The Flexible . . .

(Continued from Page 61)

to effect large savings which in themselves show the value of efficient traffic management. In addition, there are the many intangible, cooperative services on which it is impossible to set a dollar value.

Comment by Dr. Frederick

The Remington Rand General Traffic Dept. is a splendid example of keeping abreast of the times. Take for example, its readiness to use new forms of transportation such as airfreight which appears to be particularly suited and which enables the company to take advantage of speed without undue cost, considering all the advantages obtained.

Some of the advantages are:

1. Reductions in inventories, variously estimated at from 25 to 70 percent.
2. Reduction of capital frozen in goods in transit.
3. Reduction in distribution costs other than transportation.
4. Widening and scattering of market areas.
5. Widening sources of supply.
6. Improved control over supply and prices.
7. Effective management control.
8. Improvement in turnover in stocks of goods.

It also is interesting to note that some Remington Rand equipment is shipped unboxed probably by contract motor carrier or by air. Every now and then someone attempts to generalize on packing costs comparing air, for example, with other forms of transportation. But, unless these comparisons are based on the results obtained by actual experiments, such as those carried on by Remington Rand, the information is likely to be inconclusive or misleading.

The activities of the General Traffic Dept. of Remington Rand lend force to the statement that a large part of modern traffic management consists of finding ways to do the job better.*

(Resume Reading on Page 62)

Unit Load in . . .

(Continued from Page 71)

Because of the wide variation in the density of Vancoram, the trade name under which the ferro-alloys are marketed, pallet containers of three different sizes are employed for shipping.

The three basic sizes are: 42x48x34 in., 42x36x34 in., and 42x36x25 in. In stowing pallets and pallet containers in outgoing carriers, the 42-in. dimension always is placed crosswise of the carrier to make optimum use of available space.

On an average, stowing of pallet containers in outgoing carriers requires approximately one industrial-truck-hour per carload. One and one-half industrial-truck-hours are required to stow approximately the same volume of material in bulk form.

The company's interest in unit-load shipping does not apply only to its own products. The firm is working constantly with its suppliers to develop means of shipping material in unit loads.

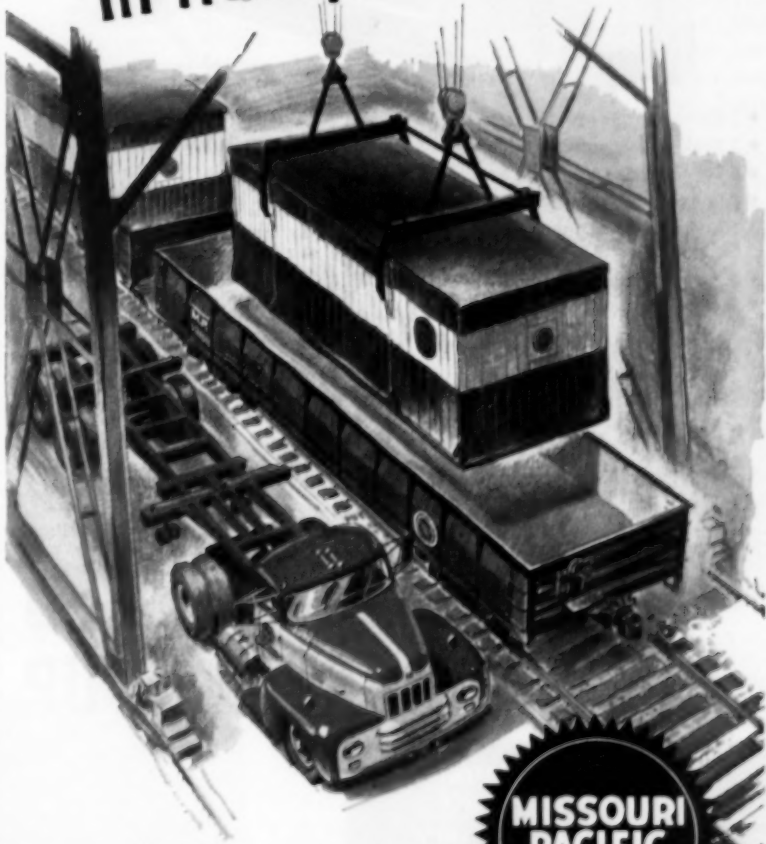
As a result of this project, the Graham plant currently is receiving aluminum ingots in unskidded, steel-strapped unit loads. Other supply items received in unit loads are: palletized refractory brick used for relining the electric furnaces, bagged refractory bonding compounds, and carbon electrodes and electrode nipples.*

(Resume Reading on Page 72)



"Never mind how it looked in the drawing-board stage, this is ridiculous."

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Chicago's Bid ...

(Continued from Page 57)

issue was the culmination of four years of work by the nine-member Port District Board. In its studies to prepare a comprehensive plan for port development in Chicago, the board selected the Lake Calumet area for port development because of its access to the Illinois Waterways, the Great Lakes and the Seaway, as well as to rail and highway systems. Under a quit claim deed, the Board secured 2,200 acres of underwater lands and riparian rights at the lake from the City of Chicago for \$250,000. It directed the engineering firm of De Leuw, Cather & Co. to study and submit plans for terminal facilities, construction costs and obtaining revenues.

Adopted by the board were these recommendations: The dredging of a 70-acre, 21-ft deep ship and mooring basin flanked by 5,700 ft of steel docks; the construction of three fireproof transit-sheds—two to be 600x120 ft in area and the other 1440x120 ft; a 200,000-sq ft back-up warehouse for sorting goods in transshipment; two grain elevators, each having a capacity of 6½ million bu.

The engineers estimate the transit-sheds will be ready for occupancy on Nov. 1, 1956, and the grain elevators, April 1, 1957.

Estimated Revenue

Gross revenues that engineers estimate will be collected at the port include:

The Illinois Grain Corp., which leased elevator No. 1, will pay a minimum rental of \$425,000 per year plus a percentage of the amount handled over 13 million bu;

The Rice Grain Corp., which leased No. 2, will pay a minimum of \$330,000 per year plus .8¢ per bu per month on average storage over 3,500,000 bu each year. Additional amounts varying between ¾¢ to 1¢ a bu also will be paid;

Transit-shed No. 1 was leased to North Pier Terminal Co. for

40¢ per sq ft per year in 1957 up to 50¢ in 1965;

Shed No. 2, leased to the Packers Terminal & Warehouse Corp., will pay 40¢ per sq ft per year in 1957 up to 60¢ in 1970;

Shed No. 3 will have the same rates as those of No. 2 but Overseas Shipping, Inc., who has the lease, will be required to pay 25¢ a year additional for each sq ft of the 36,000 sq ft of the adjoining black-top area.

A review of advantages of a world port at Lake Calumet convinced authorities that the project would be worthwhile. It is located in the center of the nation's industries, and is the hub of rail, air and intercity truck networks. When foreign ships of 10,000-ton capacity finally negotiate the Seaway for the Midwest trade, Lake Calumet harbor will be their natural berthing place. In addition, 40 per cent of the nation's foreign trade comes from the Midwest.

Prospective Savings

The economy of using all-water transportation as against a combination of rail and water is illus-

trated by the fact that Liverpool is 168 miles closer to Chicago by the all-water route. Expected savings through the Port and Seaway include:

Automobiles, Chicago to Rotter-

dam, 17 per cent; small industrial machinery, 23 per cent; tractors, to Norway and Sweden, 23½ per cent; lard, to Antwerp, 38½ per cent; road machinery, to the British Isles, 20 per cent.

Some samples of savings on imports include:

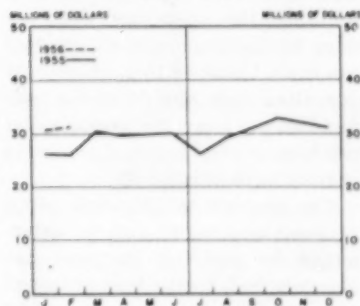
Toys shipped from Germany, 24 per cent; canned sardines from Scandinavia, 17 per cent; cod liver oil, 28 per cent; wines and spirits from Rotterdam, 38 per cent; jams from the British Isles, 10 per cent; autos, 5 per cent; and Scotch whiskey, 24 per cent.

The start of harbor improvements and the construction of facilities for trans-shipping now are realities at Lake Calumet. Revenue from leases and cargo tonnage fees assure net income at the port of \$1 million in 1957 to \$1,582,000 in 1970 and after.

Authorities believe that the good harbor engineering in prospect, and the sound fiscal policies, point out that Lake Calumet harbor is on its way to its goal—that of becoming one of the world's ranking ports. •

(Resume Reading on Page 58)

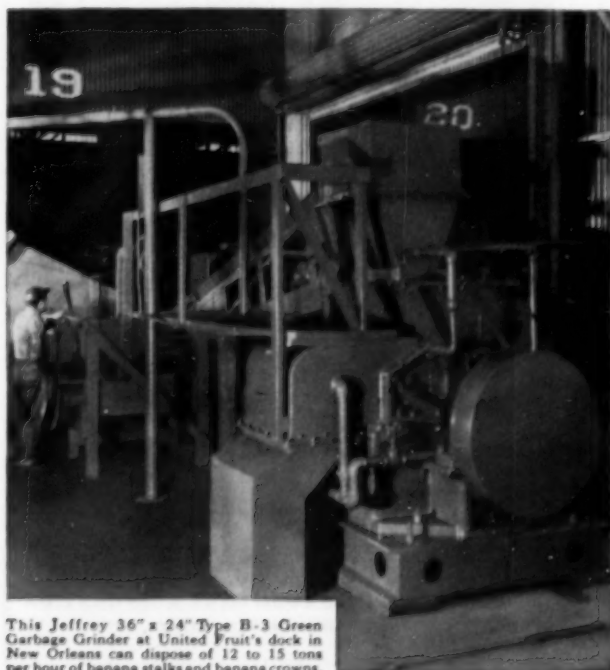
Flexible Packaging Products



Manufacturers' market shipments of converted flexible packaging products, including military specification items, during January and February 1956 amounted to \$30.6 and \$31.5 million respectively, according to a preliminary report of the Bureau of the Census, Department of Commerce. Shipments of converted flexible packaging products in January 1956 were 16.7 per cent above the January 1955 total and February 1956 shipments were 20.9 per cent greater than those for same month of previous year

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Jeffrey grinders are available in sizes to suit all food waste problems—large, like this United Fruit installation, and small sizes for restaurants and stores. Accessory equipment is also available from Jeffrey for gathering and handling wastes.

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Watchman	Refrigerated Delivery

MEMBER
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AMERICAN CHAIN OF WAREHOUSES



Carrier Handling in the Steel...

(Continued from Page 47)

hour, also is used intermittently to handle a normal amount of non-productive items.

The cost per ton of steel handled by a carrier is determined by dividing the operating cost per hour by the tons of steel handled per hour. Using \$6.10 as the hourly operating cost, and 64 as the tons handled per hour, the average cost per tons of steel handled using the carrier method is \$.0953.

The cost per ton handled using railroad equipment can be determined by dividing the cost per car switched, by the tons switched per car. For this example, \$7.50 will be used as the cost per car switched. The charge is applied each time a car is switched. Two charges are made if a gondola of steel is stored temporarily between operations.

Most of the gondolas in use today are 50-ton cars. The average cost per ton handled using railroad

switching equipment is, therefore, \$7.50 divided by 50 tons or \$.15 per ton handled.

The cost per tons of steel handled with a carrier is \$.0547 per ton less than when handled with railroad equipment. This five and one-half cents per ton saving is for each ton handled. It should be multiplied by the number of handlings per ton to obtain the total savings per ton of steel produced.

This does not include savings from reduced demurrage charges and reduced truck maintenance, or gondola loading and unloading savings. Of more importance, it doesn't include the savings resulting from greater flexibility and the elimination of down time in the mills.

Carriers are built in various widths, heights and capacities. Selection of the proper carrier size generally is determined by the size and weight of leads to be handled.

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For complete specifications on all such carriers manufactured in this country see DISTRIBUTION AGE, May, 1956, p. 94.

Each load handled requires a set of two bolsters. If these bolsters are joined together, they are called a set of one-piece bolsters. Bolsters made out of steel are superior. Wooden bolsters also are used, but they tend to dry out and crack when used for handling hot steel. For each carrier in the mills today, there are approximately 250 sets of bolsters in use.

The average cost for an individual bolster is approximately \$15 to \$20, or \$30 to \$40 a pair. The average cost for a set of one-piece bolsters is about \$85 to \$90.

No two mills seem to use identical bolster designs. The only common factor is the width of the bolster. It should be 2 in. narrower than the inside width of the carrier frame.

Figs. 4 and 5 show two good bolster designs. Both designs incorporate lock strips. These are used to insure more positive engagement between the hooks and

the bolsters. The strips on the bolster engage mating strips welded on the carrier hooks.

The two-piece type bolster is the least expensive type to build; is light enough to be shifted manually if this is ever necessary, and occupies a minimum of space when empty.

Since bolsters always are used in pairs, a one-piece bolster set always is complete. Vertical posts can be utilized more readily to retain loose loads on a one-piece set.

The maximum recommended width of the material handled on a bolster is 2 in. less than the width of the bolster. In most cases, the width of the steel carried on a bolster is about 10 in. narrower than the bolster itself.

In a number of mills currently handling bars, billets, and tubes, the average load varies from 10 to 17 tons. The over-all average of all of these mills was 13 tons per load.

Editor's Note: Mr. Knapp's remarks are excerpted from a paper presented at the Spring Meeting of the American Society of Mechanical Engineers, in Portland, Ore.

The load dimensions were the governing factors in most cases. This would not apply in mills handling slabs and coils for the average tons per load would be higher.

Performance figures were averaged from several mills handling bars, billets, and tubes. The payload trips per hour varied between four and six trips per hour. The average was 4.91 payload trips per hour.

The tons hauled per trip varied between 10 and 17. The average was 13 tons hauled per trip. The average tons handled per hour was, therefore, 4.91 trips per hour, times 13 tons per trip, or 64 tons per hour.

This distance traveled is not always the best measure of a carrier's performance. On long trips, to outlying storage areas, an operator drives faster than when maneuvering around the mill. For this reason, it is sometimes more advisable to locate the storage yards away from the more congested areas immediately adjacent to the mill. •

(Resume Reading on Page 48)



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machine moved 55 feet a minute by two men and reduces moving cost 65%

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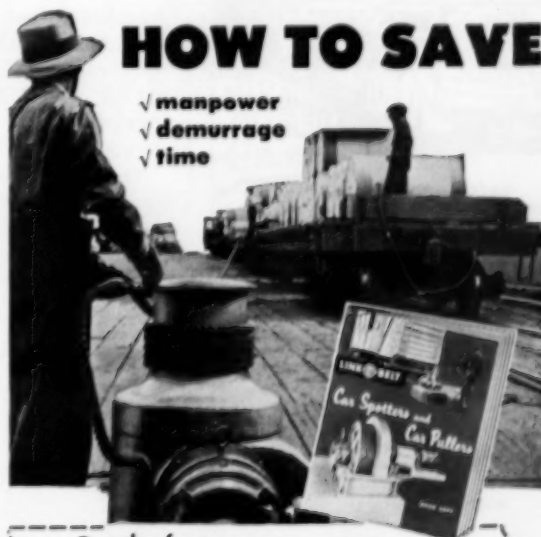
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JULY, 1956



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- ✓ demurrage
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National TRUCK LEASING SYSTEM



Less-Pallet-Load Handling . . .

(Continued from Page 45)

cent development of control devices which make it possible to memorize an unlimited number of selections and transmit these selections as required to mechanical equipment. This equipment is being used to receive dispatch, and sort merchandise into an unlimited number of storage areas at an unlimited distance from the receiving platform without human intervention.

It is being used to dispatch merchandise from storage areas to order pickers, instead of having the order pickers go to the merchandise. It is being used to consolidate as many as 160 different orders comprised of mixed goods at one time. It is being used for the automatic routing of shipments to carriers.

The Economics

From an engineering and operating point of view, the big question remains—is it economical? Assuming that the job can be done, this means, essentially, that the capital cost of equipment must not be out of line with the savings which can be obtained from its operations.

The real economic considerations lie in the determination of how a particular installation should be engineered. It probably would make no sense to set up live storage racks for the complete line of a wholesale grocery company. Analysis of the wholesaler's operations, however, may well show that 200 items represent a very high proportion of the orders filled, and a correspondingly high proportion of the labor cost. It may well be rational to set up 200 live storage racks for picking out the lpl loads of the high-demand items.

Such storage racks, of course, need not be single purpose equipment and could be used for different items at different times or seasons as demand varied. Under this kind of set-up, as the material destined for the racks was re-

ceived, it could be conveyed immediately to the storage racks and automatically sorted into its appropriate rack, ready for order picking without further human intervention.

Once this kind of set-up is installed for the high demand merchandise, then the less frequently called for items can be grouped more efficiently for order picking, perhaps around a conveyor set-up. Completed orders could then be consolidated automatically by a secondary automatic sorting system designed to sort for carriers or destinations.

Case Goods Handling

A much simpler problem would exist in a factory producing perhaps 100 different case-goods items and feeding into a storage warehouse. Such factories are largely conveyORIZED and palletized and have modern palletizing equipment. It would be a relatively simple program to set up a rack for each of the products and have the same lines which feed the palletizers also feed the racks with each brand or variety automatically sorted into its predetermined rack.

Order Assembly

Orders for merchandise then would be broken down into full pallet loads and less-than-pallet loads. The less-than-pallet loads would be discharged automatically from the racks, consolidated as complete orders and conveyed to the shipping area where they would meet the full pallet loads and be ready for shipment. All of the labor presently involved in picking out less-than-pallet loads could be used in production.

The cost of such a system would depend on the size of the units handled and the capacity required. Where volume is not too heavy it might be feasible to load the racks manually. •

(Resume Reading on Page 46)

New Life for Air Cargo

(Continued from Page 37)

service required by mail is available only from the timetable schedules of the passenger service.

The combination airlines told the Board that the cargo lines, if permitted to carry air mail, would divert considerable volumes of such traffic from the existing mail carriers. The Board was not impressed with this argument but, if the service will be used by the Post Office, there is bound to be diversion since no additional mail can be generated. If there will be little or no diversion, then no good reason exists for authorizing a service which will not be used.

Probably more important than the question of diversion is the fact that the decision of the CAB opens the door of the public treasury to the all-cargo carriers, something they have not experienced before. If the Post Office makes full use of the newly authorized service, the carriers may find that the added responsibilities involved in carrying air mail—which will be on a "must go" basis and not subject to availability of space, as has been true of the 3¢ ground mail sometimes air-lifted by the Post Office—will be a burden on their other operations.

If we can learn anything from history, it can be seen that such a situation will encourage cargo carriers to make demands for subsidy support of their mail carrying schedules, which they may show operate at a loss.

On the other hand, the action of the Board in renewing the cargo carriers' certificates was wise, from the standpoint of freight service. These carriers have made a substantial contribution toward common carriage of such traffic since their original certification.

In 1952, for example, Slick and Flying Tiger produced a combined total of about 86.5 million revenue ton-miles, nearly three times the air freight volume for three of the leading combination carriers in their all-cargo equipment; and only slightly less than the total volume developed by these combination airlines in both cargo and passenger aircraft.

While three of the leading combination carriers, with the use of all-cargo equipment in 1953, improved their all-cargo volume, they were still considerably short of the mark reached by the two leading all-cargo carriers in 1952; even short of the 61 million revenue ton-miles produced by these two in 1954.

Beyond recognizing the growing importance of air freight, it is difficult to predict with any degree of accuracy the future of this market; for the obvious reason that economic factors, individual effort, competitive action, and rates all play an important part in influencing development. It appears certain, however, that the future development of air freight lies in volume shipments. Success in this area depends largely upon the abilities of the carriers to bring air freight rates reasonably in line with surface carrier rates, considering the value of the service, through the use of more economical equipment. •

(Resume Reading on Page 38)

JULY, 1956

HOW TO
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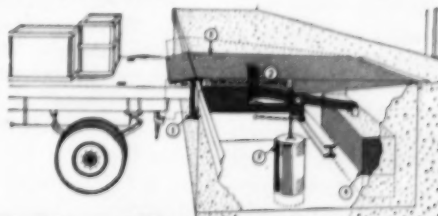
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Warehouse SPOTLIGHT

Coast Movers Elect Chipman

The California Moving & Storage Assn., meeting in Fresno last month, elected Art Chipman, of Vallejo, president. Other officers named were: John Carlson, Riverside, vice president, and Robert S. Bryan, Los Angeles, secretary-treasurer. Charles A. Woelfel was re-elected executive secretary.

—DA—

The Executive Committee of the Merchandise Div., AWA, met in Chicago June 14-15 to chart the course of Association activities and special projects for the coming year.

High-Capacity Trailer



A recent addition to the fleet of the O'Rourke Storage & Transfer Co., Pittsburgh, is this International model CO-195 tractor and 35-ft furniture semi-trailer with plastic top and skylights. The trailer is claimed to be the largest of its kind in operation east of the Mississippi River, and has a capacity of 15 rooms of household furniture.

New members of Affiliated Warehouse Cos. include: McKnight Transfer & Storage Co., Inc., Amarillo, Tex.; Cincinnati Terminal Warehouses, Inc., Cincinnati, O.; East Hartford Warehouse, Inc., East Hartford, Conn.; Gulf Florida Terminal Co., Inc., Tampa, Fla.; Standard Warehouse Co., New Orleans, La.; Anchor Warehouse Co., Inc., Trenton, N. J.; Vandalia Warehouse Corp., Vandalia, Ill.; Service Transfer, Inc., Wichita, Kan. Affiliated's Hartford member was erroneously reported here last month as Nationwide Dispatch & Storage Co.

—DA—

Minnesota-Northwest Group Re-elects All Officers

All officers of the Minnesota-Northwest Warehousemen's Assn. were re-elected at the recent Annual Meeting. Officers are: George W. Du Bois, Minneapolis, president; W. B. Carlson, St. Paul, secretary, and Harlan D. Held, Mankato, and Lorin I. Lindberg, Duluth, directors for three-year terms.

—DA—

Donald E. Horton has been appointed executive vice president of the American Warehousemen's Assn., Merchandise Div. He has been with the AWA since 1946, and executive secretary since 1954. Allen D. Walters has been appointed secretary of the group.

Schramm Honored



More than 500 warehousemen gathered at a testimonial dinner in New York June 9 to pay tribute to Louis Schramm, Jr. Here J. C. Aspinwall, Jr. (left), of Norfolk, Va., president of the NFWA, presents an inscribed silver tray to Schramm who is president of Chelsea Warehouses, Inc., New York, and of Allied Van Lines, Inc. The dinner was sponsored by the Moving and Storage Industry of Greater New York.

Warehouse Briefs

Bekins Van and Storage Co. has opened a new storage building and van terminal at 1414 E. 13th St., Merced, Calif. The new reinforced concrete block building has 10,000 sq ft of storage space.

Rochester Storage Warehouse, Rochester, N. Y., has added 55,000 sq ft of storage space to its operation with the addition of the property of the Exchange Warehouse Co.

Merchant's Refrigerating Co. has announced a new refrigerated warehouse at Vinita Park, in St. Louis County, Mo. Kenneth R. Queensen has been appointed manager.

Allied Van Lines, Inc., has opened a new Southeastern regional office and terminal in Chamblee, Ga. Twelve vans can be loaded simultaneously at the terminal dock, which is large enough to hold temporarily the furniture from 560 average size rooms.

A 24 per cent increase in the hauling capacity of its long-distance fleet has been announced by Aero Mayflower Transit Co., Inc., of Indianapolis, Ind., through the enlargement and modernization of its fleet.

Dallas (Texas) Transfer & Terminal Warehouse Co. has announced a 60,000-sq ft addition to its facilities with the completion of a new warehouse, on Young St. The fireproof building has 16-ft ceiling height, a 10-car rail siding, and a truck dock.

Neptune Storage has announced the purchase of Lyon Storage & Moving Co., Oakland, Calif. Harvey B. Lyon, former owner, will remain with the firm in the capacity of vice president.

Contest Winners Awarded Packing Vans



Six International Metro Packing Vans, like the one pictured above, were presented May 19 to winners in a nationwide sales contest among agents of the Aero Mayflower Transit Co. Shown (l to r) are: Cliff Pratt, Sexton-Clarke Auto Freight, Inc., Bremerton, Wash.; Robert Case, Slocum Van & Storage Co., Van Nuys, Calif.; Walter Meek and Wayne Jarrett, Calmay Van Lines, Inc., Los Angeles, Calif.; Carl Stoune, Central Forwarding, Inc., Killeen, Texas; E. H. Lamkin, Aero Mayflower; John Sloan Smith, president of Mayflower; Walter Brandt, McCormack's Highway Transportation, Inc., Schenectady, N. Y.; Charles Lovett, Manning Warehouse Co., Portland, Ore. There were six first prize winners in the contest—one for each of six different population categories

Movers Conference of America Calls Annual Assembly

The Movers' Conference of America has called its 1956 Annual Assembly for Aug. 5-7, at the Edgewater Beach Hotel, in Chicago. Officers urge all movers planning to attend to make reservations and secure hotel accommodations early. Reservations can be made through the MCA, 16th & P Sts., N.W., Washington 6, D. C.

—DA—

The New York State Warehousemen's Assn. has announced that its 35th Annual Convention will be conducted Aug. 22-26 at Saranac, N. Y.

—DA—

NYSARW Elects New Officers

The New York State Association of Refrigerated Warehousemen has elected the following officers: Richard Doncaster, Holley, president; William Laack, Brockport, first vice president; Edward Bishop, Sodas, second vice president, and Roger Cash, Rochester, secretary - treasurer. Doncaster succeeds Garth Shoemaker, who retired.

Illinois Warehousemen Meet

Robert S. Reeble, of Chicago, was elected president of the Illinois Warehousemen's Assn. at that group's recent Annual Meeting. Other officers named were: John O'Byrne, Champaign, vice president; Arden Hamman, Decatur, secretary, and Robert Fernstrom, Chicago, treasurer.

—DA—

The South Carolina Household Goods Movers Assn. met June 22-23 at Frogmore, S. C.

—DA—

New Traffic Group Formed

Creation of a new association of Indiana industrial traffic managers was announced last month by R. H. Ross, of Indianapolis, general traffic manager of the Allison Div., General Motors Corp., and president of the Association.

The newly formed group, The Industrial Traffic and Transportation Association of Indiana, Inc., also elected Charles Coy, Eli Lilly & Co., vice president; Glenn Orewiler, Stokely-Van Camp, Inc., treasurer, and Frank McAlister, Indiana State Chamber of Commerce, secretary.

Men in the Spotlight

T. Otis Roberts—new general manager, Colorado Ice and Cold Storage Co., Denver, Colo.

Scott Rosenberg—named general superintendent, Alford Refrigerated Warehouses, Dallas, Tex.



Charles F. Bean, Jr.—moved to St. Louis, Mo., to supervise operations of regional field men and district offices, United Van Lines, Inc. His former position as Eastern regional manager, in Lyndhurst, N. J., has been filled by **James J. White**. **Charles Lackey** also has been moved to St. Louis to perform similar work in Kansas, Kentucky, Colorado, Illinois, and Indiana.



Gerard M. Hoffman—named research and industrial engineer, National Moving & Storage Technical Foundation, NFWA.

Harvey E. Lounsbury, Jr.—appointed vice president and general manager, Northwest Operations, Lyon Van & Storage Co., with offices in Spokane, Wash.

Jack S. Kelso—elected president, Hubert Transfer & Storage Co., Pittsburgh, Pa.

Charles C. Woodard—appointed vice president and general manager, Bekins Van & Storage Co. of Missouri, Kansas City, Mo.

A. C. Kistner—new Eastern sales manager, Associated Warehouses, Inc. He replaces **Chet Webster**, retired.



Howard Hay—named assistant general manager; **Robert F. Schlee**—named to head the new Customer Service Dept., **Lawrence Walsh**—new head of the Claims Dept., and **Arthur Huber**—named safety director, Atlas Van Lines, Inc., Chicago, Ill.

F. D. Newell—appointed chairman, Finance Committee, NARW.

C. M. Kelley—promoted to assistant sales manager; **Earl L. Hutsel**—new district manager, Milwaukee, Wis.; **Jack E. Worley**—new district manager, Muncie, Ind.; **Arthur G. Krause**—new district manager, Indianapolis, Ind., and **Richard E. Bickel**—named special representative, Aero Mayflower Transit Co., Indianapolis.

J. C. Cathcart—named manager, Wilmington Marine Terminals, Wilmington, Del.

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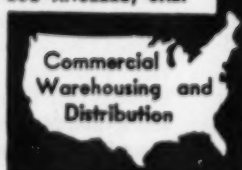
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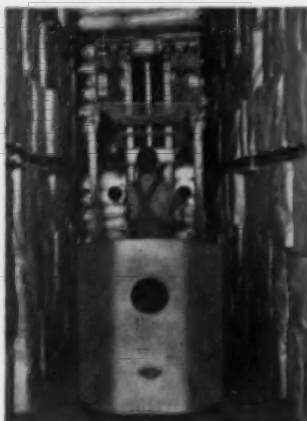
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Operating Terminal Warehouse on Tracks of
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Tobacco Inspection and Export—Low Insurance Rates
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1956 Directory Issue

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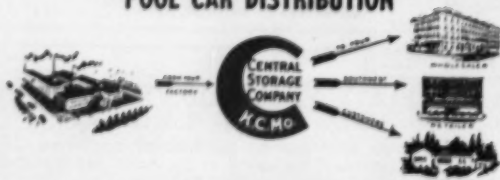
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**Excellent Storage
AT TRANSIT POINT
RIGGING, HEAVY HAULING,
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Fleet of 40 Trucks
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"Satisfactory Service Since 1887"
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New Hampshire's Largest Warehouse
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WAREHOUSING

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DISTRIBUTION

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Camden phone: EM 5-6200
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The Terminal Manager . . .

(Continued from Page 75)

it must only be revised by interpretation or renegotiation of those in authority.

The manager who does a good job of labor contract administration, and knows his operations thoroughly will be in a key position to help management negotiate the next contract. Many union leaders will accept logical company policy—but the policy must be logical, factual, and saleable.

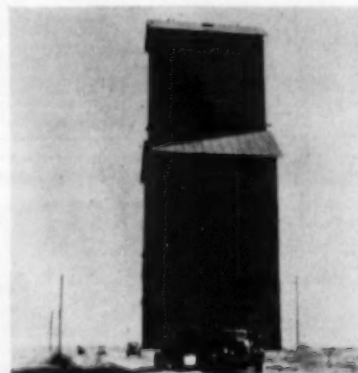
If a labor contract is hurting the company, and the manager knows exactly how and why it is hurting, he should let those who negotiate the contract know about it. Many employer negotiators

find out by employer gripes, after negotiations have been concluded, that there was something they should or might have done to correct a bad situation.

The terminal manager's knowledge of the contract and his actions in administering the contract will help write the next contract. Additionally, if he has been arbitrary or capricious in his decisions affecting the men, he will find the union attempting to control his actions, by writing specific language in the labor contract that should never be in it. •

(Resume Reading on Page 76)

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In one of eastern Colorado's biggest and most unusual moving jobs, an International truck operated by Edwin Welch House Moving Co., Wray, Col., moved a 100-ton, 70-ft high grain elevator to a farm four miles away. Only mishap during the move was a blowout

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- Free U.S. Customs and Internal Revenue bonded
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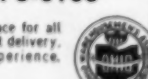


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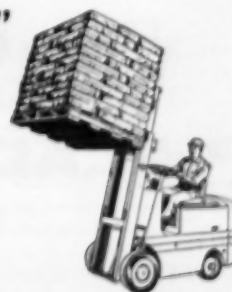
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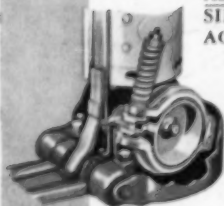
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